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In the Supreme Court of the United States

OCTOBER TERM, 1940

No. 832

**STATE OF OKLAHOMA EX REL. LEON C. PHILLIPS,
GOVERNOR OF THE STATE OF OKLAHOMA, APPEL-
LANT**

v.

**GUY F. ATKINSON COMPANY, CLEON A. SUMMERS,
UNITED STATES ATTORNEY FOR THE EASTERN DIS-
TRICT OF OKLAHOMA, ET AL.**

**ON APPEAL FROM THE DISTRICT COURT OF THE UNITED
STATES FOR THE EASTERN DISTRICT OF OKLAHOMA**

BRIEF FOR THE APPELLEES

OPINION BELOW

The opinion of the district court (R. 22-31) is reported at 37 F. Supp. 93.

JURISDICTION

The court below, three judges sitting, entered a judgment dismissing the complaint on February 8, 1941 (R. 32). The order allowing appeal was filed the same day (R. 40). Probable jurisdiction was noted March 31, 1941. The jurisdiction of this Court is based upon the Act of August 24, 1937, c.

754, Sec. 3, 50 Stat. 751, 752-753, 28 U. S. C. Supp. V, § 380a.

QUESTION PRESENTED

Congress authorized the construction of a flood control project consisting of a dam and reservoir, with power facilities, on the Red River at a place where the river is nonnavigable. The question is whether this action of Congress is valid either (1) as an exercise of its power to regulate interstate commerce, or (2) as an exercise of its power to spend in aid of the general welfare, or (3) as an exercise of both said powers.

STATUTES INVOLVED

The pertinent Sections of the Act of June 22, 1936, c. 688, 49 Stat. 1570, the Act of June 28, 1938, c. 795, 52 Stat. 1215, and the Act of October 17, 1940, Public, No. 868, c. 895, 76th Cong., 3d Sess., are set forth in Appendix A, pp. 75-79, *infra*.

STATEMENT

By this suit the State of Oklahoma seeks to enjoin both the construction of, and the condemnation of lands for, the Government's Denison Dam and Reservoir Project on the Red River (R. 12-13). The court below, with three judges sitting, upheld the constitutionality of the Acts authorizing the project, denied the injunction, and dismissed the complaint (R. 32-33).

1. *Prior litigation.*—The State's first effort to halt work on the Denison project was made on Oc-

tober 2, 1939, when it filed with this Court a motion for leave to file a bill of complaint asking an injunction against Harry H. Woodring, then Secretary of War. A rule to show cause was issued and the Secretary filed a response in which, after suggesting several jurisdictional difficulties which he did not press, he took the position that the project was constitutionally authorized and that the proposed bill therefore did not state a cause of action. The motion for leave to file was denied by an equally divided Court on February 12, 1940. *Oklahoma v. Woodring*, 309 U. S. 623.

The present suit was filed in the district court on September 6, 1940. The complaint in this case, except for the parties named as defendants, is substantially identical with the complaint in the *Woodring* case.

2. *Statutory Authorization for the Denison Project.*—The Denison dam and reservoir were authorized by Congress on June 28, 1938, c. 795, 52 Stat. 1215, as part of a nation-wide plan of flood control. The project represented the culmination of extended legislative consideration of the problem of floods on the Red River, in connection with the larger problem of flood control on the Mississippi River.

Congress has concerned itself with the Mississippi flood situation since about 1850.¹ The first

¹ A history of early flood-control legislation appears in Elliott, *The Improvement of the Lower Mississippi River for Flood Control and Navigation* (1932), pp. 1-21.

efforts were directed largely to floods in the lower Mississippi Valley; the Mississippi River Commission was formed in 1879 to deal with this situation. But it was soon discovered that flood-control efforts could not be so narrowly limited, and the jurisdiction of the Commission was, therefore, gradually extended on the Mississippi itself and over its tributaries. Later, as the extent of the problem and the inability of the states to deal with it came to be realized,² efforts were begun, commencing with enactment of the so-called First Flood Control Act of March 1, 1917, c. 144, 39 Stat. 948, to evolve a comprehensive flood-control program on a national scale.

At the start, flood-control projects were limited to the construction of levees only, and under that policy an enormous system of levees were constructed up and down the Mississippi River and its tributaries. In 1927, however, there occurred the most disastrous flood on the Mississippi River in recorded history. This was followed by an intensive Congressional investigation,³ culminating in the enactment of the Flood Control Act of May 15, 1928, c. 569, 45 Stat. 534, providing for a com-

² See, e. g., H. Rept. 1072, 70th Cong., 1st Sess., pp. 18-20; H. Doc. No. 90, 70th Cong., 1st Sess., p. 11; H. Rept. 2583, 74th Cong., 2d Sess., p. 2; S. Rept. 1662, 74th Cong., 2d Sess., p. 2.

³ Hearings, H. Comm. on Flood Control, 70th Cong., 1st Sess., 7 Vol.; Hearings on Flood Control, S. Comm. on Interstate Commerce, 70th Cong., 1st Sess.

prehensive system of flood control for the Mississippi itself, and providing as follows with respect to the tributaries of the Mississippi (Sec. 10, 45 Stat. 538):

* * * the Secretary of War, through the Corps of Engineers, United States Army, is directed to prepare and submit to Congress at the earliest practicable date projects for flood control on all tributary streams of the Mississippi River system subject to destructive floods which projects shall include: The Red River and tributaries * * *;

The Act further required that the report on these projects should contain a study of the practicability of establishing a system of reservoirs to control floods on the tributaries and a discussion of the benefits which would accrue to navigation as a result of the effect of the reservoirs in stabilizing stream flow and preventing silting and erosion.

Such a report was submitted on January 3, 1936, and appears as House Document No. 378, 74th Cong., 2d Sess. (hereinafter referred to as "H. Doc. 378"). On June 22, 1936, Congress, after extended hearings,* passed the Flood Control Act of 1936, c. 688, 49 Stat. 1570, authorizing the construction of various flood-control projects through-

* See Hearings before S. Comm. on Interstate Commerce, 74th Cong., 2d Sess., on S. 3531; Hearings, H. Comm. on Flood Control, 74th Cong., 2d Sess., on S. 3531.

out the country and directing the Secretary of War to continue investigation of other projects, including that at Denison (Sec. 7, 49 Stat. 1596).

In January 1937, the disastrous Ohio River flood occurred. The House Committee on Flood Control immediately passed a resolution directing the Chief of Engineers to submit a comprehensive flood-control plan for the Ohio and lower Mississippi Rivers. Pursuant to this resolution, the Chief of Engineers submitted a report in April 1937 (Com. Doc. No. 1, H. Comm. on Flood Control, 75th Cong., 1st Sess.), in which he recommended, among other things, the construction of 24 flood-control reservoirs on tributaries of the Mississippi, including the Red River (p. 11). With respect to the Denison Project, he stated (p. 7):

A reservoir at Denison, Tex., on the lower Red River, immediately below the mouth of the Washita, would remove the threat of the coincidence of a large flood from the Red with a flood in the Mississippi, and would also afford highly desirable protection to the fertile bottom lands in the lower Red River Valley.

And again (p. 8):

The recent great flood on the Ohio is a convincing proof of the need for developing the maximum reservoir capacity to reduce flood discharge on that stream. The development of reservoir flood control on the other streams should not await a similar

flood disaster, but should be undertaken in advance thereof. On the Red River, for example, investigations indicate that a flood far exceeding any of record is distinctly possible. The Denison Reservoir would prevent such a flood from reaching disastrous proportions in the valley below it.

Pursuant to the direction contained in Section 7 of the Flood Control Act of 1936, the Secretary of War transmitted to Congress on March 12, 1938, a report from the Chief of Engineers, United States Army, which appears as House Document No. 541, 75th Cong., 3d Sess. (hereinafter referred to as "H. Doc. 541").^{*} This report recommended construction of a dam and reservoir at Denison for the combined purposes of flood control and the development of hydroelectric power (pp. 10, 79). Extensive hearings were thereupon held by the House Committee on Flood Control (Hearings before the House Committee on Flood Control on H. R. 10918, 75th Cong., 3d Sess., pp. 605-686). On June 28, 1938, Congress passed the Flood Control Act here challenged, authorizing the construction of additional projects, including the one at Denison. The Act provides (52 Stat. 1215, 1216, 1219):

SEC. 4. That the following works of improvement for the benefit of navigation and

^{*} Copies of H. Doc. 541 have been filed with the Clerk. The relevant portions of Appendix H to this document, which is referred to in the report (p. 29) but is not printed as a part of it, are set forth in Appendix B, pp. 80-96, *infra*.

the control of destructive floodwaters and other purposes are hereby adopted and authorized to be prosecuted under the direction of the Secretary of War and supervision of the Chief of Engineers in accordance with the plans in the respective reports herein-after designated: * * *

The Denison Reservoir on Red River in Texas and Oklahoma for flood control and other purposes as described in House Document Numbered 541, Seventy-fifth Congress, third session, with such modifications thereof as in the discretion of the Secretary of War and the Chief of Engineers may be advisable, is adopted and authorized at an estimated cost of \$54,000,000 * * *

A total of \$13,200,000 has been allotted from appropriations for the fiscal years 1940 and 1941 for the construction of the project. Act of June 28, 1939, c. 246, 53 Stat. 856; Act of June 24, 1940, Pub., No. 653, c. 415, 76th Cong., 3d Sess.; see H. Rept. 604, 76th Cong., 1st Sess. p. 4; Hearings, S. Subcom. on Appropriations on H. R. 6260, 76th Cong., 1st Sess., p. 13.

In the Act of October 17, 1940, Public, No. 868, c. 895, 76th Cong., 3d Sess., which authorizes the improvement of certain rivers and harbors in the interest of national defense, Congress further declared:

SEC. 4. The project for the Denison Reservoir on Red River in Texas and Oklahoma, authorized by the Flood Control Act

approved June 28, 1938, is hereby declared to be for the purpose of improving navigation, regulating the flow of the Red River, controlling floods, and for other beneficial uses.

3. *The Denison Dam and Reservoir.*—The Red River rises near the eastern edge of New Mexico and flows generally eastward to Fulton, Arkansas, crossing the Texas Panhandle and forming the boundary between the States of Oklahoma and Texas;^a from Fulton the river flows south into Louisiana where it enters the Mississippi at Red River Landing. The Denison Dam will be located in Oklahoma and Texas, 751 miles above the mouth of the Red River (H. Doc. 541, p. 2). The Reservoir will extend upstream along the Red River and Washita River valleys. Provision has been made for the necessary relocation of highways, railroads, and public utilities (H. Doc. 541, pp. 56-57).

The project will control floods originating above Denison and afford protection below it in Oklahoma, Texas, Arkansas, and Louisiana. It will also benefit navigation on the Red River by stabilizing the flow, decreasing bank caving, and silt carriage, and otherwise, as hereinafter more fully discussed. In addition, provision has been made for the generation of hydroelectric power since this will make the project more economically

^a *Oklahoma v. Texas*, 260 U. S. 606, 636.

practicable. The power plant will be located on the Texas side of the dam and water will be run through its turbine and returned to the river about one mile below the dam embankment. No determination has yet been made as to what disposition will be made of the power generated. (H. Doc. 541, pp. 9, 11, 12, 49, 67, 79, 94.)

We are advised that up to the present time the United States has acquired title to over 23,000 acres of land and that the clearing of the dam site, the excavation for the outlet works, and a substantial amount of construction have been completed.

Since appellant suggests (R. 7-8; see Br. 9-11, 32-35) that certain authorized changes which have been made in the original specifications have altered the character of the project, we outline briefly the precise nature of the modifications. House Document 541 contemplated a dam with a top elevation of 695 feet above mean gulf level and made the following allocation of reservoir capacity (p. 45):

(a) *Dead storage*.—Stream bed elevation 505 to lower power pool elevation 595, 1,400,000 acre-feet.

(b) *Power pool storage*.—Elevation 595 to elevation 620, 2,000,000 acre-feet.

(c) *Flood pool storage*.—Elevation 620 to crest of spillway, elevation 660, 5,900,000 acre-feet.

(d) *Detention flood storage.*—Storage above spillway crest, elevation 660, to the maximum reservoir surface reached by the impounded floodwaters, which in the case of the maximum probable flood would be 6,400,000 acre-feet for elevation 687.

As stated (p. 8, *supra*), Congress authorized the dam as described in House Document 541 "with such modifications thereof as in the discretion of the Secretary of War and the Chief of Engineers may be advisable." Pursuant to this authority the engineers continued to study the project and prepared detailed specifications which were embodied in a two-volume report entitled "Definite Project for Denison Dam and Reservoir—Red River." This report has been approved by the Chief of Engineers and the Secretary of War and will be referred to in this brief as the "Definite Project."

The final specifications call for a dam with a top elevation of 670 feet and make the following allocations of reservoir capacity (Def. Proj. pp. 10-14, *infra*, pp. 97-104):

(a) *Dead storage.*—Stream bed elevation 505 to lower power pool elevation 587, 1,020,000 acre-feet.

(b) *Power pool storage.*—Elevation 587 to elevation 617, 2,060,000 acre-feet.

⁷ A copy of this document has been filed with the Clerk, and the pertinent parts are printed as Appendix C to this brief (pp. 97-110, *infra*).

(c) *Flood pool storage*.—Elevation 617 to crest of spillway, elevation 640, 2,745,000 acre-feet. ✓

(d) *Detention flood storage*.—Storage above spillway crest, elevation 640, to maximum reservoir surface reached by the impounded flood waters. In the case of the maximum probable flood, this would be approximately ³³~~250~~0,000 acre-feet for elevation 66~~12~~¹². See Appendix A to Def. Proj. Plate A-23.

The reduction in the total amount of flood control storage is explained as follows (Def. Proj. p. 12, *infra*, p. 100):

The amount of flood control storage to be provided is dependent upon the economic returns or benefits which will result from the protection afforded by the flood storage provided. * * * The annual benefits increase very little when floods greater than the 1908 flood, the maximum flood of record, are controlled, while the costs of providing this control increased rapidly. Accordingly, storage to control floods equal in magnitude to the 1908 flood, the largest of record, is all that can be economically justified.

Translated into dollars and cents the changes in the specifications will result in reducing the total an-

* The outlets can be operated so as to provide an additional 758,000 acre-feet for flood storage. Moreover, the figure given in the text represents the amount of flood storage which would be available if the power pool was at maximum elevation when the flood occurred. (Appendix D to Def. Proj., p. 10, *infra*, p. 109-110.)

nual flood benefits by only \$153,800. House Document 541 (p. 7) estimated that the annual flood control benefits would be \$1,766,880 (see also p. 96, *infra*). Using the same method of computation the annual flood control benefits from the modified project will be \$1,613,080 (App. D to Def. Proj. pp. 1-3, *infra*, pp. 104).*

The statement is made in appellant's brief (pp. 11, ~~323~~) that in the project as outlined in House Document 541, 37 per cent of the inundated acre-feet is for water storage for power and 63 per cent for flood control, while in the project as modified, 53 per cent of the inundated acre-feet is for water storage for power, and 47 per cent is for flood control. This statement is misleading in the extreme. In the first place, it ascribes the dead storage pool to the power aspect of the dam alone, whereas in fact, as House Document 541 as well as the Definite Project plainly show, this pool is designed in large part for the accumulation of silt and would therefore be necessary even if the dam were built for

* While appellant discusses the changes in the original specifications at some length (Br. 9-11, 32-35) it does not suggest that in making these modifications the engineers or the Secretary of War exceeded the authority given them in the 1938 Act. In any event, as the court below held (R. 27), Congress has ratified the modifications. As pointed out in appellant's brief (p. 33) Congress was advised of the changes which had been made. Hearings, S. Subcom. on Appropriations on H. R. 6260, 76th Cong., 1st Sess., pp. 25-26, 201. Thereafter Congress appropriated money for the project, Act of June 28, 1939, c. 246, 53 Stat. 856, and passed the Act of October 17, 1940, *infra*, p. 79.

flood control purposes alone (H. Doc. 541, pp. 45-46; Def. Proj., pp. 10, 11, *infra*, pp. 98-99).¹⁰ Deducting the dead storage from the acre-feet of water devoted to power, the figures as to the allocation of storage in the Definite Project are: 1,020,000 acre-feet for dead storage; 2,060,000 acre-feet for power; 2,745,000 acre-feet for flood control. See Definite Project, pp. 10, 11, 12, *infra*, pp. 98-102. In the second place, appellant omits from consideration the detention flood storage, which, in the case of the maximum probable flood, would provide temporary storage, for flood control purposes alone, for approximately ~~2,300,000~~ 3,300,000 acre-feet of water in addition to the 2,745,000 acre-feet in the flood pool. In the light of these considerations, appellant's statement that 53 per cent of the storage is to be for power and only 47 per cent for flood control is obviously erroneous.

Appellant's statement that 82 per cent of the height of the dam is allocable to power and only 18 per cent to flood control (Br. p. 11) is erro-

¹⁰ The Definite Project explains as follows the necessity for dead storage (Def. Proj., pp. 10-11, *infra*, pp. 98-99): "The term 'dead storage' applies to the space in the Denison Reservoir for the deposit of silt which would otherwise reduce the efficiency and economic worth of the flood-control storage, since the Red River is a heavy carrier of silt." (Cf. H. Doc. 541, p. 46). It also states (Def. Proj., p. 10, *infra*, p. 97): "The dead storage, which must be provided for the accumulation of silt, makes available sufficient head for the development of hydroelectric power, so that a failure to develop such power would represent an economic waste."

neous for the same reasons. Appellant's figures in this respect are particularly misleading for the reason that the part of the dam allocated to flood control is the upper part which stores a much greater volume of water per foot of height than the lower part. This is established by the statement of the District Engineer, appearing in House Document 541, that if the dam were designed for flood control alone, it would be but 20 feet lower in height than the combined project (see H. Doc. 541, p. 42). This statement had reference to the dam as it was planned before the Definite Project. It indicates, however, that the height of the dam allocable to power alone is small.

4. *The present suit.*—The complaint (R. 1-13), as amended (R. 17-19), alleges that the Red River is not navigable within the State of Oklahoma (R. 2), that the Denison project is not for a public purpose, and that therefore the Act of June 28, 1938, authorizing construction of the dam and reservoir exceeds the power vested in Congress by Section 8 of Article I of the Constitution and "contravenes the rights and powers" reserved to Oklahoma by the Tenth Amendment (R. 12). It is further alleged that the Act of October 17, 1940, which was passed after the filing of this suit, is likewise unconstitutional and "only a self-serving Congressional declaration". (R. 18.)

Construction of the project will, it is alleged, injure the State in the following manner: Approxi-

mately 100,000 acres of land in Oklahoma will be inundated, much of which "is rich soil, in a high state of cultivation" or "has large potential oil reserves" and 3,800 acres of which are owned by the State; many miles of highways, rights-of-way, and bridges will be destroyed; the southern bank of the river, heretofore fixed by this Court as the boundary mark between Oklahoma and Texas, will be obliterated; and the waters of the Red River and the Washita, one of its tributaries, will be taken without compensation for the generation and sale of electric power. The complaint also alleges that the taking and inundation of the lands incident to the project will deprive the State and its political subdivisions of future tax revenues and will burden the State with "a serious social and economic problem" resulting from the removal of its citizens from the area to be inundated (R. 11).

The complaint names as defendants the Guy F. Atkinson Company, a Nevada corporation, alleged to be proceeding with the construction of the dam under contract with the Government; and Cleon A. Summers, United States Attorney for the Eastern District of Oklahoma, and Curtis P. Harris, Special Attorney, Department of Justice, who are alleged to be engaged in the prosecution of condemnation proceedings. The prayer is that the Atkinson Company be restrained from building the dam and that Summers and Harris be restrained from instituting or conducting condemnation proceedings (R. 12-13).

The Government moved to dismiss on the grounds that (1) the suit was in reality brought against the United States without its consent, (2) the Secretary of War was an indispensable party, (3) the State has an adequate remedy at law, and (4) the complaint fails to state a cause of action because the Act of Congress pursuant to which the defendants are proceeding is constitutional (R. 19-21).

In accordance with the Act of August 24, 1937, c. 754, Sec. 3, 50 Stat. 751, 28 U. S. C., Supp. V, § 380a, the case was heard before the district court with three judges sitting. Upon oral argument counsel for the State conceded that if the statute in question is constitutional the motion to dismiss should be sustained. They further conceded that in the determination of that question no evidence was necessary or proper (R. 26).

The court, after first deciding that the case was properly before it (R. 25), held that the Act authorizing the construction of the project "is valid under the power of Congress to regulate and control interstate commerce" (R. 29). The court found it unnecessary to decide whether "it might be valid under any other clause of the Constitution" (R. 29). Judgment was entered sustaining the motion to dismiss and denying the injunction (R. 32-33). From that judgment this direct appeal has been taken (R. 40).

SUMMARY OF ARGUMENT

I

The District Court held that this is not a suit against the United States and that the Secretary of War is not an indispensable party. These rulings are doubtful, but not certainly incorrect. The authorities on both questions are collected in the Government's brief in *Brooks v. Dewar*, No. 718, this Term.

As pointed out in that brief, this Court has on several occasions recognized an exception to the general rule as to suits against the Government by holding that a suit brought against a government officer to enjoin a wrongful invasion of the plaintiff's property rights is a suit against the officer individually and not one against the Government. While this exception appears to be contradicted by other cases and is difficult to reconcile logically with the general rule as to suits against the Government, it has, nonetheless, been recognized with a reasonable degree of consistency. Accordingly, we do not feel obliged to question it in this case.

We submit the question of whether the Secretary of War is an indispensable party on the brief in the *Dewar* case. Whatever conclusion the Court reaches in that case would seem equally applicable here.

There is also doubt as to whether the complaint shows such irreparable injury to the appellant as

to entitle it to equitable relief. Many of the allegations with respect to damage to the State set forth alleged invasions of sovereign rights as distinguished from legal or equitable rights of person or property. The others allege injury for which there seems to be an adequate remedy at law. However, the question is far from clear. Although when a State sues, it accepts the ordinary limitations upon equity jurisdiction, in doubtful cases the Chancellor's conscience might well lean toward hearing the complaint of the State. Under these circumstances, we waive any claim that the complaint shows too little injury to invoke the powers of the equity court. This waiver is doubtless insufficient to foreclose an issue which may be examined by the Court *sua sponte*. But it is a fact which may legitimately be given heavy weight in the decision of that issue. *Helvering v. Davis*, 301 U. S. 619, 639, 640.

II

The court below held that the construction of the Denison Project for the benefit of navigation and flood control was a proper exercise of the power of Congress to regulate and control interstate commerce. That ruling was plainly correct.

In both the Flood Control Act of 1938 and in the Act of October 17, 1940, Congress declared that one of its purposes in authorizing the construction of the dam and reservoir was to improve navigation. Appellant in effect asks this Court to dis-

regard the Congressional determination thus declared and to invalidate the legislation, not on the ground that the dam and reservoir will have no effect upon commerce, but on the ground that the admitted effect that it will have upon commerce, as described in House Document 541, is not sufficient to justify the project. This, we submit, is beyond the competence of the courts. Judicial review is, we believe, limited to determining whether or not the legislation is in fact a regulation of interstate commerce; if it is such a regulation, the legislation is within the commerce power of Congress, irrespective of any economic assessment of commerce benefits against project costs. *Arizona v. California*, 283 U. S. 423, 452-446; *Ashwander v. Tennessee Valley Authority*, 297 U. S. 288, 326-330; cf. *United States v. Appalachian Power Co.*, 311 U. S. 377, 424, 426-427.

But apart from the inadequacy of the complaint, House Document 541 furnishes ample proof of the validity of the Denison Project under the commerce power of Congress. The project will have a two-fold effect upon commerce: first, by promoting the navigability of the Red River on its lower stretches, it will help to develop that river as an instrumentality of interstate transportation; and second, by removing the danger of disastrous floods, it will prevent destruction of the arteries of interstate commerce.

The Red River was held not to be navigable at Denison in *Oklahoma v. Texas*, 258 U. S. 574. But

the lower stretches of the river are navigable, and more than \$4,000,000 has been expended for the improvement of navigation on the river. The Denison Project will make a substantial contribution toward the further improvement of the river for navigation by decreasing bank caving and silt carriage, by helping toward the stabilization of the flow of the river, and by furnishing more dependable navigation stages. Furthermore, by removing the danger of floods of disastrous proportions in the lower Red River Valley, the project will prevent destruction of facilities used for navigation.

Furthermore, the project will remove the threat of a coincidence of a large flood from the Red River with a flood on the Mississippi River. In this respect the dam and reservoir are in aid of navigation on the Mississippi, since insofar as they tend to prevent disastrous floods on the Mississippi, they tend to reduce the damage to the waterway and to navigation facilities caused by such floods.

The Denison Project is also a valid exercise of the commerce power of Congress because, by removing the danger of disastrous floods, it will prevent destruction of the arteries of interstate commerce. The facts presented to Congress clearly show that a large flood would destroy bridges, roads, railroad tracks, and other instrumentalities of commerce. Prevention of such destruction to the arteries of commerce is well within the power of Congress. *Gilman v. Philadelphia*,

3 Wall. 713; *Second Employers' Liability Cases*, 223 U. S. 1, 47; *Arizona v. California*, 283 U. S. 423; *Ashwander v. Tennessee Valley Authority*, 297 U. S. 288.

Since these benefits to commerce will result from the project, the Government's right to undertake the project cannot be defeated by the fact that the dam will be built at a point where the river is not navigable. *United States v. Rio Grande Irrigation Co.*, 174 U. S. 690; *California Oregon Power Co. v. Cement Co.*, 295 U. S. 142, 159; *United States v. Utah*, 283 U. S. 64. We need not contend that the benefits to commerce which will result from the project will be commensurate with its cost, or that the project would have been recommended by the Army engineers for that purpose alone; since the project does in fact protect and promote interstate commerce, it is within the commerce power of Congress, even though the economic and engineering decision of Congress might have been different if no other purpose would be served by the dam.

III

Authorization of the Denison project is also a proper exercise of the power of Congress to spend for the general welfare. It is settled that Congress has power to expend public moneys for the general welfare, and that the exercise of this power is not limited to the other enumerated powers. *Steward Machine Co. v. Davis*, 301 U. S. 548, 586-587; *Helvering v. Davis*, 301 U. S. 619, 640.

Congress has a wide range of discretion in determining what will promote the general welfare; its action will not be disturbed by the courts unless it is so plainly wrong as to constitute a display of arbitrary power.

Authorization of the Denison dam and reservoir was a deliberate decision by Congress, made after extensive investigation and consideration, that the project would promote the public welfare. At the time it made that decision, Congress had before it a wealth of evidence showing the regional and national benefits to be derived from the project. Consideration of these benefits leads to the inevitable conclusion that construction of the dam and reservoir is an unassailable object of expenditure under the welfare clause.

Not only is the object of the expenditure within the welfare power of Congress but the method of achieving that object is also clearly a proper exercise of the power. The welfare clause authorizes appropriations for acquisition and construction as well as for mere disbursements; only halting provision could be made for the general welfare if the power of Congress over public funds were limited simply to expenditure divorced from the acquisition or construction of property as a result of the expenditure. And it is clear that as an incident of its power to authorize construction of the project, Congress has power to authorize the use of eminent domain to acquire the lands necessary for

the project. See *United States v. Gettysburg Electric Ry.*, 160 U. S. 668.

IV

Since the Denison project is a valid exercise of the powers granted Congress to regulate interstate commerce and to spend for the general welfare there is no merit in the contention that the Tenth Amendment is violated. *United States v. F. W. Darby Lumber Co. et al*, No. 82 this Term, decided February 3, 1941.

ARGUMENT

I

THE JURISDICTION OF THE DISTRICT COURT

The district court held that this is not a suit against the United States and that the Secretary of War is not an indispensable party (R. 25). These rulings are doubtful, but not certainly incorrect.

A. *The Suit May Be One Against the United States.*—The bill is laid against the Government's contractor and officials of the Department of Justice (R. 1-2, 8-9). None is alleged to have any personal interest in the controversy and each is made a defendant only because he is using and has threatened to use his official powers and the property of the United States to carry out the mandate of Congress (see R. 8-9).

The Government's brief in *Brooks v. Dewar*, No. 718, this Term, pp. 12-23, contains an elaborate

collation of the cases which need not be repeated here. It is sufficient to point out that the suit seeks to control the acquisition of property by the Government, to control by judicial decree the functioning of the United States, and is brought against the defendants in their capacity as officers and agents of the United States. Many decisions of this Court hold that, under these circumstances, the suit is in fact brought against the United States and may not be maintained without its consent (Br. No. 718, pp. 15-19).

However, the Court from time to time has introduced a number of exceptions into this rule (Br. No. 718, pp. 19-22). One of these exceptions appears applicable here. The State of Oklahoma now has undoubted title to and possession of some 3,800 acres which will be inundated through construction of the dam (R. 4). If that project is not authorized by a valid law of Congress, the defendants may be said to be acting as individuals and to threaten a wrongful invasion of the property rights of the State. By such reasoning, this Court on several occasions has held that the plaintiff who seeks to protect his property and possession has brought suit not against the Government but only against the officer. *In re Tyler, Petitioner*, 149 U. S. 164, 190; *Allen v. Baltimore & Ohio Railroad Company*, 114 U. S. 311, 314-317; *Philadelphia Co. v. Stimson*, 223 U. S. 605, 619-620; see *Colorado v. Toll*, 268 U. S. 228 (see Br. No. 718, pp. 20-21).

These cases are difficult to reconcile with the general rules as to suits against the Government.

(a) Whether or not the action is laid against the Government must be fixed by the nature of the Government's interest in the controversy, not by that of the plaintiff. (b) In every case, the plaintiff may be supposed to file his complaint to protect some right or interest. Whether this interest is real or personal, quasi-sovereign or personal, possessory or contractual, would seem in logic to be an inquiry wholly irrelevant to whether the suit is brought against the officer as an individual or as a representative of the United States.

(c) The cases cited above seem to be contradicted by *Hagood v. Southern*, 117 U. S. 52, 67-69, and *In re Ayers*, 123 U. S. 443, 489, 493-506, where the plaintiffs were held unable to enjoin the tax collector's invasion of their property.

The exception to the rule of immunity which permits the plaintiff to challenge acts injurious to his admitted property rights is an exception which, though difficult logically to reconcile with the immunity of the sovereign, has yet been recognized with a reasonable degree of consistency. We do not feel obliged to question it in this case.

B. The Secretary of War May Be An Indispensable Party.¹¹—Again, the Government's brief in

¹¹ There is a corresponding question as to whether the Attorney General is an indispensable party, since the defendants Summers and Harris are acting under his direction.

Brooks v. Dewar, No. 718, this Term, pp. 27-35, contains a full discussion of the conflicting authorities and policies which relate to this question. Whatever conclusion the Court should reach in that case would seem equally applicable here.

C. Equity Jurisdiction Is Doubtful But Not Challenged.—It is doubtful whether the complaint shows such irreparable injury to the appellant as to entitle it to equitable relief. This question was raised by the motion to dismiss (R. 20-21) but is not discussed in the opinion of the district court.

Many of the allegations of damage set forth allege invasions of sovereign rights as distinguished from legal or equitable rights of person or property. Thus, the bill alleges appellant's rights to preserve the integrity of its political subdivisions (R. 9-10), to preserve its southern boundary marker (R. 10), to maintain jurisdiction over the territory to be inundated (R. 10), and to be free from social and economic problems resulting from evacuation of the reservoir area (R. 11). It is not clear that such allegations establish irreparable injury or show a justiciable controversy. See *Massachusetts v. Mellon*, 262 U. S. 447; *New Jersey v. Sargent*, 269 U. S. 328, 330-334; *New York v. Illi-*

This issue was not raised by the motion to dismiss (R. 19-21) but it was urged on oral argument. Since, if the Secretary of War is an indispensable party, the suit must fail, it is unnecessary to urge that the Attorney General, too, should have been named as defendant.

nois, 274 U. S. 488, 489-490; *Georgia v. Stanton*, 6 Wall. 50, 75-77.¹²

The remaining allegations with respect to injury to appellant relate to the threatened taking and inundation of 3,800 acres of state-owned land, the destruction of public highways and bridges, the diversion without compensation of waters alleged to belong to the State, and the impairment of state revenues derived from taxes on the land to be inundated (R. 9-11). Insofar as any state property is taken, the State will receive just compensation therefor and consequently is not threatened with irreparable injury. *Hurley v. Kincaid*, 285 U. S. 95, 104. Moreover, all defenses based on lack of power in the United States to prosecute the project will be available to appellant at the time its land is condemned. *Cavanaugh v. Looney*, 248 U. S. 453, 456. There is no threat of diversion without compensation of waters alleged to belong to appellant since the Act of 1938 expressly saves to Oklahoma the right to continue

¹² Appellant asserts (Br. 21-22) that the suit is brought as *parens patriae* of its citizens. While there is at least some analogy to *Georgia v. Tennessee Copper Co.*, 206 U. S. 230, 237; *Kansas v. Colorado*, 206 U. S. 46, 95-96; and *Wisconsin v. Illinois*, 278 U. S. 367, 281 U. S. 179, the individuals affected by the project have available remedies such as a defense to condemnation proceedings or a suit under the Tucker Act, c. 231, 36 Stat. 1093, 1136, by which their rights may be protected. Accordingly, there may be no occasion for the State to bring suit on their behalf. See *Oklahoma v. Cook*, 304 U. S. 387, 393-396.

to exercise all existing proprietary or other rights of supervision of and jurisdiction over the waters of all tributaries of the Red River within the State above the dam site. 52 Stat. 1219-1220, 78, *infra*; see 83 Cong. Rec., p. 8601, 75th Cong., 3d Sess.¹³ And if the State should have any proprietary rights in the river¹⁴ which will be invaded by construction of the project, it may receive compensation for the injury by instituting suit under the Tucker Act. C. 231, 36 Stat. 1093, 1136, 28 U. S. C., §§ 41 (20), 250 (1).

With respect to the allegations (R. 9-10) of impairment of state revenues derived from taxes on the land to be inundated, it may be noted that, since full compensation is to be paid for the property, the total taxable wealth of the State is not necessarily decreased, and may be materially increased, by the project. Moreover, it may be

¹³ Moreover, there is no foundation in fact for the allegation in the complaint that the waters of the river will be used to generate power for distribution in Texas (R. 6). H. Doc. 541 shows that no conclusion has been reached as to the disposal of the power to be generated (pp. 10, 12) and there is consequently no presently existing threat of diversion of the power. Furthermore, under the doctrine of *Arizona v. California*, 298 U. S. 558, 566, a state may not complain of diversion unless it has taken some positive steps to make use of the water itself.

¹⁴ The extent of the state's ownership of waters in non-navigable streams presents one of the principal questions of law involved in *Nebraska v. Wyoming*, No. 8, Original, this Term, now pending before this Court on reference to a Special Master.

doubted whether the State's interest in the preservation of the value of taxable property within the State gives it standing to enjoin the acquisition of such property by condemnation or purchase for the purpose of subsequent inundation. *Florida v. Mellon*, 273 U. S. 12, 17-18, cf. *Franklin Tp. in Somerset County, N. J. v. Fugwell*, 85 F. (2d) 208 (App. D. C.).

These considerations suggest that, measured by ordinary rules of equity jurisdiction, the complaint fails to show irreparable damage. Yet they do not seem wholly persuasive. Although when a state sues, it accepts the ordinary limitations upon equity jurisdiction (see *California v. Latimer*, 305 U. S. 255), in doubtful cases, the chancellor's conscience might well lean toward hearing the complaint of the state, asserting both political and property rights. Cf. *Missouri v. Holland*, 252 U. S. 416; *Colorado v. Toll*, 268 U. S. 228.

Under these circumstances, we waive any claim that the complaint shows too little injury to invoke the powers of an equity court. This waiver is doubtless insufficient to foreclose an issue which may be examined by the Court *sua sponte*. But it is a factor which may legitimately be given heavy weight in the decision of that issue. *Helvering v. Davis*, 301 U. S. 619, 639-640. We conclude, therefore, that the Court is entitled in the exercise of its equity jurisdiction to decide the issues presented by the complaint.

In summary, there is very serious doubt as to the power or the propriety of the court below giving a decision on the merits. We urge none of the possible objections, but recognize that they cannot lightly be brushed aside. The inconclusive nature of our discussion reflects, we believe, a corresponding uncertainty in the decisions. Under such circumstances, unless the issues be determined in *Brooks v. Dewar*, No. 718, this Term, the Court might find it appropriate to consider the controversy on the merits. If it agrees with our contentions on the merits, it will be unnecessary to decide the questions of jurisdiction. Cf. *Inland Waterways Corp. v. Young*, 309 U. S. 517; *Woodring v. Wardell*, 309 U. S. 527; *Perkins v. Lukens Steel Co.*, 310 U. S. 113.

II

THE DENISON DAM AND RESERVOIR PROJECT IS A VALID EXERCISE OF THE COMMERCE POWER OF CONGRESS

The court below rested its decision upon the proposition that the construction of the Denison Project for the benefit of navigation and flood control was a proper exercise of the power of Congress to regulate and control interstate commerce (R. 29). Having so concluded, the court below found it unnecessary to pass upon whether the project might also be valid "under any other clause of the constitution" (*id.*). The ruling that the project is a valid exercise of the commerce power is, we submit, plainly correct.

A. THE ISSUE POSITED BY THE COMPLAINT

It is essential to note, at the outset, the precise issue presented by the complaint. Appellant does not allege that the Denison Project will have no effect upon interstate commerce; it alleges only that, *except as set forth in House Document 541*, the project will not "protect or improve the navigable portions of the lower reaches of the Red River or the Mississippi River," or otherwise improve navigation or regulate the flow of the Red River or serve other beneficial uses (R. 18). With respect to House Document 541, the complaint alleges that this shows only that the project will have an "intangible, indirect, inconsequential, and unsubstantial" effect upon commerce (*id.*). It is apparent from these allegations that appellant admits that the project will have some effect upon interstate commerce—the effect shown by House Document 541—and rests its case solely upon the legal conclusion that this effect is only indirect and unsubstantial. In our view, such a pleading does not state a case justifying judicial review of the Congressional action.

Congress plainly determined that the Denison Project would be in aid of navigation. Section 4 of the Flood Control Act of 1938 (*infra*, p. 77), which authorized construction of various flood control projects, including that at Denison, stated that these projects were "for the benefit of navigation and the control of destructive floodwaters and other

purposes” Again, in the Act of October 17, 1940, Public No. 868, c. 895, 76th Cong., 3rd Sess., Congress reiterated its declaration that the Denison Project is “for the purpose of improving navigation, regulating the flow of the Red River, controlling floods, and for other beneficial uses.” And, as we show below, in House Document 541, incorporated by reference in the Flood Control Act of 1938, there is ample reference to the effect of the project upon interstate commerce.

Appellant in effect asks this Court to disregard the Congressional determination thus declared and to invalidate the legislation, not on the ground that the dam and reservoir will have no effect upon commerce, but on the ground that the admitted effect that it will have on commerce, as described in House Document 541, is not sufficient to justify the project. This, we submit, is beyond the competence of the courts. Judicial review is, we believe, limited to determining whether or not the legislation is in fact a regulation of interstate commerce; if it is such a regulation, the legislation is within the commerce powers of Congress, irrespective of any economic assessment of commerce benefits against project costs. This is the unequivocal teaching of *Arizona v. California*, 283 U. S. 423, 452-456, and *Ashwander v. Tennessee Valley Authority*, 297 U. S. 288, 326-330. Cf. *United States v. Appalachian Power Co.*, 311 U. S. 377, 424, 426-427.

But we need not rely upon the inadequacy of the complaint. Analysis of the admitted effect of the Denison Project upon commerce, as set forth in House Document 541, shows that construction of the dam and reservoir is well within the power of Congress because the project will aid in the improvement of navigation and the control of flood waters, and will serve to prevent the interruption of interstate commerce by floods.

B. THE DENISON PROJECT WILL AID IN THE IMPROVEMENT OF NAVIGATION AND IN THE CONTROL OF FLOOD WATERS

The Red River was held to be not navigable at Denison in *Oklahoma v. Texas*, 258 U. S. 574, and we assume, *arguendo*, that that decision is controlling here. But, as the opinion in *Oklahoma v. Texas* discloses (p. 582), east of Oklahoma the Red River flows 557 miles through Arkansas and Louisiana to the Mississippi River. Appellant does not question the navigability of these lower stretches of the river. In fact, before the advent of railways in the latter half of the nineteenth century, the river formed the principal artery of transportation into its basin. While commerce in substantial volume is now limited to the section between Alexandria, Louisiana, and the Mississippi, a distance of about 122 miles, goods valued at approximately \$2,000,000 are carried each year (H. Doc. 541, pp. 3, 65). The fact that parts of the river are no longer used for commerce does not, of course, mili-

tate against the federal power in respect of them. *Economy Light Co. v. United States*, 256 U. S. 113, 123.

The initial project for the improvement of navigation upon the river was undertaken in 1828, and up to June 30, 1936 expenditures for that purpose totaled over \$4,000,000. The Denison project will make a substantial contribution toward the further improvement of the river for navigation. In the first place, the project will decrease bank caving and silt carriage. Secondly, investigations have established that stabilization of the flow is essential to a dependable navigation system on the river. Such stabilization can only be obtained by the construction of reservoirs. In this connection "the Denison Reservoir would be of considerable benefit" as the regulated discharge "would increase low-water flows and furnish more dependable navigable stages." (H. Doc. 541, pp. 3, 66-68, 72, 79.) And finally, by removing the danger of floods of disastrous proportions in the lower Red River Valley (Com. Doc. No. 1, H. Comm. on Flood Control, 75th Cong., 1st Sess., pp. 7, 8), the project will prevent destruction of facilities used for navigation on the lower stretches of the river.

Furthermore, the project will "remove the threat of the coincidence of a large flood from the Red with a flood in the Mississippi" (Com. Doc. No. 1, H. Comm. on Flood Control, 75th Cong., 1st Sess., p. 7; see H. Doc. 541, p. 86). In this respect the

dam and reservoir are in aid of navigation on the Mississippi, since insofar as they tend to prevent disastrous floods on the Mississippi, they tend to reduce the damage to the waterway and to navigation facilities caused by such floods.

Since these benefits to navigation will result from the project, the Government's right to undertake the project cannot be defeated by the fact that the dam is being built at a point where the river is not navigable. The power of Congress over navigation is not confined to the navigable portions of interstate streams. Just as Congress may regulate intrastate commerce in order to protect interstate commerce,¹⁵ so it may exercise control over the non-navigable portions of a river in order to preserve or promote commerce on the navigable portions. *United States v. Rio Grande Irrigation Co.*, 174 U. S. 690, 703, 706, 708-710; *California Oregon Power Co. v. Cement Co.*, 295 U. S. 142, 158-159; *United States v. Utah*, 283 U. S. 64, 75, 90; *United States v. Eighty Acres of Land*, 26 F. Supp. 315, 320 (E. D. Ill.); *Appalachian Electric Power Co. v. Smith*, 4 F. Supp. 6 (W. D. Va.); *United States v. Griffin*, 58 F. (2d) 674 (W. D. Va.); *United States v. 546.03 Acres*, 22 F. Supp. 775, 777 (W. D. Pa.).

We need not contend that the benefits to navigation which will result from the project will be commensurate with its cost or that the project

¹⁵ *Houston & Texas Ry. v. United States*, 234 U. S. 342.

would have been recommended by the Army engineers for that purpose alone (see H. Doc. 541, pp. 9, 94). It seems plain enough that if the project does in fact protect and promote interstate commerce, it is within the commerce powers of Congress, even though the economic and engineering decision of Congress might have been different if no other purpose would be served by the dam, *Arizona v. California*, 283 U. S. 423, 452-456; *Ashwander v. Tennessee Valley Authority*, 297 U. S. 288, 326-330; cf. *United States v. Appalachian Power Co.*, 311 U. S. 377, 424, 426-427.

These cases also make it plain that there is no occasion to determine the authority of the Federal Government to construct the Denison Dam for the purpose of power development alone, as an exercise of its welfare, war, or commerce powers. The proposed development of power in this project is plainly an incident of the flood control and commerce purposes, intended merely to make the project more economically feasible (see H. Doc. 541, p. 94). There is, accordingly, no question of its validity. *United States v. Chandler-Dunbar Co.*, 229 U. S. 53, 73; *Arizona v. California*, *supra*; *Ashwander v. Tennessee Valley Authority*, *supra*; *United States v. Appalachian Power Co.*, *supra*.

Appellant stresses the proposition that the flood control and power purposes of the dam and reservoir are "functionally and physically separate" (Br. pp. 23, 35-39) meaning thereby, as we under-

stand the contention, that a dam and reservoir for flood control could be constructed without the inclusion of hydroelectric facilities and that the inclusion of such facilities does not aid in the flood control aspect of the project.¹⁶ From this premise, appellant proceeds to the conclusion that if it is within the competence of Congress to construct a project for flood control alone, but beyond its competence to construct one solely for power purposes, then, since a single purpose project would be "functionally and physically" possible, a multiple purpose project may not be undertaken. The argument treats as legally irrelevant the engineering fact that part of the project necessary for flood control is also available for power and that the inclusion of power facilities, although requiring a somewhat larger initial investment, renders the entire project economically feasible.

The *Chandler-Dunbar, Arizona* and *Ashwander* cases are to the contrary; and the recent decision in

¹⁶ Contrary to appellant's assertion (Br. p. 51), the addition of the hydroelectric facilities will improve the navigability of the river. The division engineer endorsing the report of the district engineer pointed out (H. Doc. 541, pp. 79-80): "It should be noted * * * that a dependable low water flow of 2,200 to 3,000 cubic feet per second which would result from construction and operation of the power project at Denison would be of distinct benefit to the small commerce now developed upon those reaches of the lower Red River which are included in approved navigation projects and might have a material bearing upon future studies of the Red River with a view to its further improvement."

United States v. Appalachian Power Co., *supra*, expressly approved the practice of adding hydroelectric facilities to dams erected for navigation and flood control. Unquestionably, as was there held, the recovery of the cost of improvements through utilization of power is a part of commerce control. The "fact that purposes other than navigation will also be served [by the dam] could not invalidate the exercise of the authority conferred even if those other purposes would not alone have justified an exercise of Congressional power." *Arizona v. California*, 283 U. S. 423, 456. It is therefore clear that Congress was empowered to include in the Denison Dam facilities for the generation of electricity.

C. THE DENISON PROJECT WILL PREVENT THE INTERRUPTION OF INTERSTATE COMMERCE BY FLOODS

The Denison Project is also a valid exercise of the commerce power of Congress because, by removing the danger of disastrous floods, it will prevent destruction of the arteries of interstate commerce. In the basin of the Red River (as distinguished from its ordinary flood plain) there is a well-developed railroad system, the principal routes being from the Middle West to the Gulf of Mexico and from the East and Southeast to the West (H. Doc. 541, p. 24).¹⁷ These railroads cross the Red

¹⁷ Main line railroads in the basin are the Illinois Central, Texas Pacific, Missouri Pacific, Missouri, Kansas & Texas,

River over eleven bridges (H. Doc. 378, p. 263).

Denison itself is a division point and the site of large railroad shops (H. Doc. 541, p. 24). Complementing these railroad lines is a comprehensive and well-maintained system of highways radiating in practically all directions from nine principal highway centers.¹⁸ From Denison the main highways extend north to Tulsa, Oklahoma, and St. Louis, Missouri, and south to the principal cities of Texas (H. Doc. 541, p. 23). The trunk highways are used by numerous interstate motor bus and freight lines (H. Doc. 541, pp. 23-24). There are eighteen highway bridges across the Red River and twenty-two ferry crossings (H. Doc. 378, p. 263). In addition, the region is traversed by many oil and gas pipe lines extending from the Southwest to the Middle West and North and serving such cities as Chicago and Detroit (H. Doc. 541, p. 24).

Although the report of the District Engineer states (H. Doc. 541, p. 29) that "there are but few of the works of man such as cities, villages, highways, or railway bridges, or even farm buildings

Santa Fe, St. Louis Southwestern, St. Louis and San Francisco, Illinois & Arkansas, Rock Island, Fort Worth & Denver, Kansas City Southern, and Louisiana Ry. & Navigation Co. (H. Doc. 378, pp. 35, 264).

¹⁸ The basin has 1,970 miles of federal roads, 4,930 miles of state roads, of which 1,250 miles are paved, and 2,980 miles of gravel roads, in addition to numerous county and municipal roads (H. Doc. 378, p. 36).

in the ordinary flood plain of the river," it is clear that any large flood on the Red River would disrupt interstate commerce. In the event of the maximum probable flood, and to a lesser degree in the event of a flood of lesser intensity, bridges and ferries would be washed away, stopping interstate transportation by rail, truck, or motorcar (H. Doc. 541, p. 4; *id.*, Appendix H, pp. 88, 91, 93, *infra*.¹⁹ Railroad tracks in the flooded area would be rendered unusable²⁰ and interstate highways would be flooded (*id.* pp. 85, 88, *infra*). Many of the pipe lines laid across the river would be destroyed or damaged (*id.* p. 95, *infra*). Telephone, telegraph, and power lines within the valley would be considerably damaged, thereby impairing interstate utility

¹⁹ The 1927 flood caused damage of \$30,000 to a toll bridge in Wichita County. Flood damages for the years 1924-1927 to another toll bridge amounted to about \$43,000, and \$15,000 damage was caused to a free bridge in Burkburnett, Texas, in the 1928 flood (H. Doc. 378, pp. 372-373).

²⁰ Testimony appearing in Hearings before the House Committee on Flood Control, 75th Cong., 3d Sess., p. 658, shows that at Shreveport, Louisiana, the St. Louis and Southwestern Railroad was required to move its tracks three times within a short period because of flood velocity in the Red River. The 1908 flood caused \$250,000 damage to the Texas and Pacific Railway Company and interrupted traffic for two months on branch lines and one month on the main line. Forty miles of main-line track and 90 miles of branch-line track were affected. Bulletin of American Railway Engineering Association, Vol. 29, No. 303, Part II (1928), pp. 41, 44. The 1927 flood caused temporary discontinuance by the Louisiana R. & N. Company of regular service between Shreveport and Alexandria (*id.*, p. 83).

service (*id.*, p. 92, *infra*). Aviation facilities also lie in the path of any large flood. There is, for example, a municipal airport at Shreveport, Louisiana, representing an investment of \$300,000, which was only recently endangered by high water on the Red River (Hearings, H. Com. on Flood Control, 75th Cong., 3d Sess., p. 658). The Denison dam and reservoir will give substantial protection to these instrumentalities of commerce in the event of even the maximum probable flood, and will give correspondingly greater protection in the event of smaller floods.²¹

Moreover, the Red River is a boundary between Oklahoma and Texas. Traffic over the boundary is necessarily interstate. A flood on the river boundary would disrupt that traffic, thus immediately interfering with intercourse between the two states.

We think it plain that Congress has the power to prevent this threatened dislocation of interstate commerce by authorizing construction of the Denison flood-control project and thus striking at the root of the trouble. This Court has often held that Congressional authority over interstate commerce comprehends power to take all steps deemed neces-

²¹ The project as outlined in H. Doc. 541 would have protected 600,000 acres of cleared land in the event of the maximum probable flood (H. Doc. 541, p. 71); as modified by the Definite Project the protection will extend to 520,000 acres in the event of such a flood (Appendix D to Def. Proj., p. 2, *infra*, p. 107.).

sary or advisable to prevent obstruction or destruction of the arteries of commerce, whatever the source of the threatened injury. See *Gilman v. Philadelphia*, 3 Wall. 713, 725; *Second Employers' Liability Cases*, 223 U. S. 1, 47; *Arizona v. California*, 283 U. S. 423, 455-456; *Ashwander v. Tennessee Valley Authority*, 297 U. S. 288; *Virginian Ry. v. Federation*, 300 U. S. 515, 553; *Labor Board v. Jones & Laughlin*, 301 U. S. 1, 37; *Santa Cruz Co. v. Labor Board*, 303 U. S. 453, 466. This established rule applies to obstruction and destruction caused by floods as well as to interference from other causes. In *Arizona v. California*, 283 U. S. 423, 453, 463, this Court upheld a dam project partially on the ground that it regularized stream flow and thus promoted navigability. Clearly, if such projects are valid when they conserve or improve one instrumentality of interstate commerce—navigable rivers—they are similarly valid when they prevent threatened destruction of other, equally important, instrumentalities of interstate commerce—railroads and highways, bridges, interstate pipe lines, telephone and telegraph lines, air fields, and the like.

A long line of cases supports the power of Congress to construct various types of instrumentalities necessary for commercial intercourse. As this Court stated in *California v. Pacific Railroad Co.*, 127 U. S. 1, 39:

The power to construct * * * national highways and bridges from State to

State, is essential to the complete control and regulation of interstate commerce. Without authority in Congress to establish and maintain such highways and bridges, it would be without authority to regulate one of the most important adjuncts of commerce.

Congress has exercised this power in aid of telephone and telegraph lines (*Pensacola Tel. Co. v. Western etc. Tel. Co.*, 96 U. S. 1, 11), railroads (*Pacific Railroad Removal Cases*, 115 U. S. 1, 18), highways (*Indiana v. United States*, 148 U. S. 148), and bridges (*Luxton v. North River Bridge Co.*, 153 U. S. 525). It seems entirely clear that if Congress has power to authorize construction of these various arteries of interstate transportation, it has the lesser power of protecting existing instrumentalities from destruction or disruption caused by floods. Cf. *Santa Cruz Co. v. Labor Board*, 303 U. S. 453, 463; *Virginian Ry. v. Federation*, 300 U. S. 515; *Second Employers' Liability Cases*, 223 U. S. 1.

III

THE ACT OF JUNE 28, 1938, IS A PROPER EXERCISE OF THE POWER OF CONGRESS TO PROVIDE FOR THE GENERAL WELFARE

As shown in the preceding point, the Denison project, considered either from the standpoint of navigation or flood control, is a valid exercise of the power of Congress over interstate commerce. The court below did not find it necessary to go

further (R. 29). However, the legislative record demonstrates that when Congress authorized the construction of the dam and reservoir it did so because the project, in addition to benefiting commerce, would promote the general welfare. Accordingly, it is our position that the Denison project may be sustained under either (1) the commerce clause, (2) the general welfare clause, or (3) the commerce and general welfare clauses taken together.²²

It is settled that the general welfare clause of the Constitution grants to Congress power to authorize the expenditure of public moneys for the general welfare, and that the exercise of this power is not limited to the other enumerated powers. *Steward Machine Co. v. Davis*, 301 U. S. 548, 586-587; *Helvering v. Davis*, 301 U. S. 619, 640; see *United States v. Butler*, 297 U. S. 1, 65-66.

This Court has left no doubt that it is essentially for Congress and not the courts to determine what will promote the general welfare. Of all the great powers granted to Congress by the Constitution, few are as fully adapted to the widest Congress-

²² The validity of an act of Congress need not, of course, depend on any single clause of the Constitution. *Ashwander v. Valley Authority*, 297 U. S. 288, 327-330; *Norman v. B. & O. R. Co.*, 294 U. S. 240, 303; *United States v. Gettysburg Electric Ry.*, 160 U. S. 668, 681; *Juillard v. Greenman*, 110 U. S. 421, 439-440; *Legal Tender Cases*, 12 Wall. 457, 534.

sional discretion as is that to provide for the general welfare. Each expenditure for that purpose depletes the funds available for other methods by which to promote the general good; the legislative function is primarily that of choice among competing welfares. The exercise of the welfare power advances the national welfare at the expense of the Federal Treasury, not at the cost of private rights or freedoms. Each exercise of the power, then, is simply the choice by Congress of the expenditure best calculated to promote the national good and offers no threat to any individual interest which might be sufficient to invoke judicial protection against other types of legislation.

Mr. Justice Cardozo, in *Helvering v. Davis*, 301 U. S. 619, 640-641, explained why this field is so peculiarly committed to the judgment of Congress alone. He said:

The line must still be drawn between one welfare and another, between particular and general. Where this shall be placed cannot be known through a formula in advance of the event. There is a middle ground or certainly a penumbra in which discretion is at large. *The discretion, however, is not confided to the courts. The discretion belongs to Congress, unless the choice is clearly wrong, a display of arbitrary power, not an exercise of judgment. This is now familiar law.* "When such a contention comes here we naturally require a showing that by no reasonable possibility

can the challenged legislation fall within the wide range of discretion permitted to the Congress." *United States v. Butler, supra*, p. 67. * * * Nor is the concept of the general welfare static. Needs that were narrow or parochial a century ago may be interwoven in our day with the well-being of the Nation. What is critical or urgent changes with the times. [Italics supplied.]

We are left, in this case, exceptionally free from doubt as to the decision of Congress that the project here in question is an appropriate exercise of the power to provide for the general welfare. In Section 1 of the Flood Control Act of June 22, 1936, c. 688, 49 Stat. 1570, authorizing the investigation and survey of flood-control projects, of which the Denison dam was one, Congress declared, with unusual explicitness:

It is hereby recognized that destructive floods upon the rivers of the United States, upsetting orderly processes and causing loss of life and property, including the erosion of lands, and impairing and obstructing navigation, highways, railroads, and other channels of commerce between the States, constitute a menace to national welfare; that it is the sense of Congress that flood control on navigable waters or their tributaries is a proper activity of the Federal Government in cooperation with States, their political subdivisions, and localities

thereof; that investigations and improvements of rivers and other waterways, including watersheds thereof, for flood-control purposes are in the interest of the general welfare; that the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected.

There has accordingly been a deliberate and detailed decision by Congress that tributaries of navigable streams should be improved, by projects such as this, in order that the general welfare might be advanced.²³ The succeeding pages will show that

²³ The subsequent statutes contain nothing to the contrary. The Act of June 28, 1938 (*supra*, pp. 7-8) authorizes the Denison project "for the benefit of navigation and the control of destructive floodwaters and other purposes." The Act of October 17, 1940 (*supra*, pp. 8-9), declares that the project is "to be for the purpose of improving navigation, regulating the flow of the Red River, controlling floods, and for other beneficial uses." These declarations envisage benefits to the general welfare as well as interstate commerce. However, it should be noted that the Senate Committee had the following to say about the 1940 Act: "This section states that the Denison reservoir in Texas and Oklahoma previously authorized and now under construction, is authorized pursuant to the power vested in Congress under the commerce clause of the Constitution." Sen. Repts. Nos. 1876 (p. 4) and 2072 (p. 10), 76th Cong., 3d Sess. Cf. H. Rept. No. 2361 (p. 13) and Sen. Rept. 1365 (p. 71), 76th Cong., 3d Sess. But the

this decision cannot be said to be "clearly wrong," or "a display of arbitrary power." *Helvering v. Davis*, 301 U. S. 619, 640.

A. FLOOD CONTROL IN GENERAL IS AN EXERCISE OF THE POWER
TO PROVIDE FOR THE GENERAL WELFARE

It is unnecessary again to set before the Court the varied and extensive aid which Congress, through its appropriations, has offered to public health, education, industry, and agriculture.²⁴ It is sufficient here to note that federal relief of the distress which follows upon catastrophes has long been a settled policy.²⁵ Prominent among these oc-

1940 Act does not so state. At most the Committee report evidences the concern of Congress that benefits to interstate commerce should not be overlooked.

²⁴ For a comprehensive list of appropriation acts for such activities, the Court is respectfully referred to the Appendix to the Brief for the United States, Part C, pp. 61-69, in *United States v. Butler*, *supra*, No. 401, October Term, 1935.

²⁵ *Earthquakes*.—Venezuela, 1812 (Act of May 8, 1812, c. 79, 2 Stat. 730); New Madrid, Missouri, 1815 (Act of February 17, 1815, c. 45, 3 Stat. 211); Italy (Act of January 5, 1909, c. 7, 35 Stat. 584); and Japan, 1925 (Act of February 24, 1925, c. 297, 43 Stat. 963-964).

Indian Depredations.—Florida, 1836 (Public Res. No. 1, 5 Stat. 131); Minnesota in 1863 (Act of February 16, 1863, c. 37, 12 Stat. 652); and in general in 1834 (Act of June 30, 1834, c. 180, 6 Stat. 581); and 1860 (Act of May 9, 1860, c. 40, 12 Stat. 15).

Fires.—New York City, 1836 (Act of March 19, 1836, c. 42, 5 Stat. 6); Alexandria, Virginia, 1827 (Act of January 24, 1827, c. 3, 6 Stat. 356); Portland, Maine, 1866 (Public Res. No. 69, 14 Stat. 364); San Francisco, 1906 (Public Res. Nos. 16 and 19, 34 Stat. 827, 828); and Salem, Massachusetts, 1914 (Act of August 1, 1914, c. 223, 38 Stat. 609, 681).

Wars or Famines.—Ireland in 1880 (Public Res. No. 16, 21 Stat. 303); the Southern States in 1867 (Public Res. No.

casions are those when Congress has offered aid to the victims of floods. Ever since 1874, Congress has repeatedly appropriated funds for the relief of persons injured by the recurrent floods characteristic of many American rivers.³⁰ As this Court

28, 15 Stat. 28); American citizens in Cuba in 1897 (Public Res. No. 11, 30 Stat. 220); India in 1897 (Public Res. Nos. 8 and 12, 30 Stat. 219, 220); Alaskan natives of the St. Paul and St. George Islands in 1897 (Act of June 4, 1897, c. 2, 30 Stat. 11, 29; Act of December 18, 1897, c. 2, 30 Stat. 226; Act of July 1, 1898, c. 546, 30 Stat. 597, 616); French West Indies in 1902 (Act of May 13, 1902, c. 787, 32 Stat. 198); Europe in 1919 (Act of February 25, 1919, c. 38, 40 Stat. 1161); and Russia in 1921 (Act of December 22, 1921, c. 15, 42 Stat. 351).

Tornadoes or Cyclones.—Mississippi in 1880 (Public Res. No. 30, 21 Stat. 306; and the Southern States generally in 1908 (Public Res. No. 20, 35 Stat. 572)).

Yellow Fever.—1879 (Act of April 18, 1879, c. 1, 21 Stat. 1); 1888 (Public Res. Nos. 44, 48, 25 Stat. 630, 631).

Casshopper Scourges.—1875 (Act of January 25, 1875, c. 25, 18 Stat. 303; Act of February 10, 1875, c. 40, 18 Stat. 314); 1877 (Act of March 3, 1877, c. 106, 19 Stat. 363, 374); and 1878 (Act of June 14, 1878, c. 191, 20 Stat. 115, 127).

³⁰ Mississippi River, 1874 (Act of April 23, 1874, c. 125, 18 Stat. 34; Act of May 13, 1874, c. 170, 18 Stat. 45; Act of June 23, 1874, c. 455, 18 Stat. 204, 230); 1882 (Act of April 11, 1882, c. 77, 22 Stat. 44; J. Res. Nos. 6, 9, 12, 16, 22 Stat. 378, 379); 1884 (Public Res. Nos. 18, 32, 23 Stat. 269, 273); 1890 (Act of March 31, 1890, c. 58, 26 Stat. 33; J. Res. No. 16, 26 Stat. 671); 1897 (Public Res. Nos. 3, 9, 30 Stat. 216, 219); 1912 (Public Res. No. 19, 37 Stat. 633); and 1913 (Act of October 22, 1913, c. 32, 38 Stat. 208, 211, 215, 216). Southern States generally in 1928 (Act of January 26, 1928, c. 11, 45 Stat. 53; Act of May 16, 1928, c. 572, 45 Stat. 539, 543; Act of June 13, 1929, c. 18, 46 Stat. 8). The Ohio River in 1884 (Public Res. Nos. 9, 12, 23 Stat. 267, 268). The Rio Grande River in 1897 (Public Res. No. 14, 30 Stat. 221).

said in *Steward Machine Co. v. Davis*, 301 U. S. 548, 586-587:

It is too late today for the argument to be heard with tolerance that in a crisis so extreme the use of the moneys of the nation to relieve the unemployed and their dependents is a use for any purpose narrower than the promotion of the general welfare.

Congress has an unquestioned power to provide for the general welfare by appropriations for relief *after* the disaster. *A fortiori*, it has power by appropriation to *prevent* those disasters. It would be unthinkable that federal appropriations must be held unused while floodwaters destroy life and health, homes and industries, crops and

Kentucky, Vermont, and New Hampshire in 1928 (Act of May 16, 1928, c. 572, 45 Stat. 539, 570). Loans for seed, feed, and fertilizer to flood-stricken farmers in Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama in 1929 (Act of February 25, 1929, c. 318, 45 Stat. 1306). Rescue work in 1928 (Act of May 29, 1928, c. 853, 45 Stat. 853, 930) and in 1929 (Act of February 28, 1929, c. 366, 45 Stat. 1349, 1381).

From 1933 to 1936 loans amounting to approximately \$11,414,000 for rehabilitation after disasters and catastrophes such as floods, earthquakes, tornadoes, and fires were made by the Reconstruction Finance Corporation under authority of J. Res. No. 12, 48 Stat. 20; Act of April 13, 1934, c. 121, 48 Stat. 589; Act of April 17, 1936, c. 234, 49 Stat. 1232. From 1937 to the present, this activity has been continued by the Disaster Loan Corporation which has loaned approximately \$21,666,000 to sufferers from floods and other catastrophes under authority of the Act of February 11, 1937, c. 10, 50 Stat. 19; J. Res. No. 251, 50 Stat. 211; and the Act of March 3, 1938, c. 40, 52 Stat. 84.

roads, because they can come into play only after the harm has been done. The great clauses of the Constitution were not contrived to operate with any such caprice.

Congress, at least, has had no doubt as to the scope of its welfare powers. Since 1850 it has made expenditures for combined navigation and flood control (*supra*, p. 3) and since 1917 it has been engaged in the field of flood control alone, with only incidental attention to the improvement of navigation. See *Arizona v. California*, 283 U. S. 423, 458; Act of March 1, 1917, c. 144, 39 Stat. 948. Since 1917, appropriations of approximately \$1,455,926,000 have been authorized for flood-control projects and \$967,595,634 has actually been appropriated. This Congressional interpretation of its welfare powers should be given great weight. *United States v. Curtiss-Wright Corp.*, 299 U. S. 304, 327-328; *Cincinnati Soap Co. v. United States*, 301 U. S. 308, 315.

The national interest in the control of floodwaters throughout the country, and, indeed, along any one of the nation's major rivers, is not open to question. For many years recurrent floods on the various rivers of the country have created a national problem of grave concern. It is estimated that the damage caused by these floods amounts to approximately \$100,000,000 per year;²⁷ in the years 1938

²⁷ Hearings before the Committee on Flood Control on H. R. 10618, 76th Cong., 3rd Sess., p. 23.

and 1939 alone, they caused damage of approximately \$148,900,000, resulted in the loss of 397 lives, and made necessary the evacuation of 15,200 families.²⁸ When these annual figures are translated into terms of damage caused by individual large floods, which occur only periodically, the gravity of the problem becomes clear. For example, the 1937 flood in the Ohio River Basin caused direct damage conservatively estimated at more than \$400,000,000. Water, electricity, and gas services were discontinued in many cities, highway and railway communications were severed, and business and industrial activities were completely disrupted for several weeks. More than 500,000 persons were driven from their homes.²⁹ Again, the damage in the Pittsburgh district during the 1936 flood amounted to approximately \$200,000,000.³⁰ The flood of March 1938 in the Los Angeles, San Gabriel, and Santa Ana Basins in California caused damage of \$100,000,000 and the loss of 87 lives.³¹ And the great flood of 1927 in the Mississippi River Basin resulted in a loss of 200 lives, rendered 700,000 homeless for about a month and caused

²⁸ Hearings before the House Committee on Flood Control on H. R. 6634, 76th Cong., 1st Sess., p. 6.

²⁹ H. Doc. No. 1, 75th Cong., 1st Sess., p. 3.

³⁰ Hearings before the House Committee on Flood Control on H. R. 7646, 75th Cong., 1st Sess., pp. 26-27.

³¹ Hearings before the House Committee on Flood Control on H. R. 6634, 76th Cong., 1st Sess., p. 6.

actual property damage estimated to be upward of \$200,000,000."

In addition to the direct damage and loss of life caused by floods, inestimable indirect damage and distress inevitably follow in their wake. Among the indirect effects may be noted the disruption of railway, highway, and telephone and telegraph communication, the threat to life and personal security in river communities, the personal suffering of flood refugees, the inconvenience resulting from the cessation of public utilities, the dislocation of industrial activity, the increase in sickness and loss of earning power, and the loss of livestock due to insect epidemics which always follow floods."

In the light of these facts and of the Congressional determination that they create a situation of national concern, it seems beyond question that the flood control expenditures authorized by Congress are for the welfare of the people, and that this welfare is general not particular, national not local. This is particularly true because of the inability of the several states to undertake an effective program of flood control. See *Helvering v. Davis*, *supra*, p. 644."

"H. Doc. No. 90, 70th Cong., 1st Sess., p. 13.

"See Hearings before the House Committee on Flood Control on H. R. 7646, 75th Cong., 1st Sess., p. 30.

"The records of the War Department show that at the present time the Department has completed, or is in the process of constructing, 202 flood-control projects in various parts of the country, including such projects as reservoirs in the

The validity of flood-control projects has been questioned in two lower federal courts. In each case the constitutionality has been upheld. *In re United States*, 28 F. Supp. 758, 764 (W. D. N. Y.); *United States v. Eighty Acres of Land*, 26 F. Supp. 315 (E. D. Ill.). In the latter case the court said (p. 320):

That flood control and the prevention of soil erosion are matters of public interest, national in scope, has been demonstrated through disasters affecting the whole nation. Great floods have been destructive of life, property, and soil over large areas. Dust storms have been steadily denuding one part of the continent through the damage, discomfort, and possible enrichment of the soil of other parts. Minor floods and local winds and rains are producing soil erosion, impoverishing the soil in every state and county in the nation. Soil conservation through prevention of erosion has become a national objective. Flood control has long been such.

We therefore think it beyond contest that the general flood-control program relates to the national welfare, and that this welfare is general, not

Connecticut River and Susquehanna River Basins, dams in the Ohio River Basin and in the Arkansas River Valley, levees in the Mississippi River Basin, and improvements at Los Angeles, and along the Columbia River and its tributaries in Washington and Oregon. Indeed, flood-control projects of one sort or another have been or are being constructed with federal funds in 37 states, and extensive surveys and investigations are in progress in all 48 states.

particular. There remains only the question whether the Denison reservoir was arbitrarily included by Congress in the general program of flood control.

B. THE DENISON PROJECT PROVIDES FOR THE GENERAL WELFARE

As has been pointed out (pp. 3-9), the Denison project is a part of a comprehensive national program of flood control. Before approving it, Congress made a long and intensive investigation. No less than four exhaustive reports were made during the period 1930-1938 following surveys and investigations made by the Corps of Engineers of the United States Army, with the assistance of the Federal Power Commission. See H. Doc. 541, at pp. 13-14. Following these reports, extensive hearings were held before the House Committee on Flood Control, 75th Cong., 3d Sess. (1938), pp. 605-686; and before both the House and Senate Subcommittees on Appropriations, 76th Cong., 1st Sess., considering the War Department Civil Functions Bill for 1940 (House Hearings, pp. 383-443; Senate Hearings, pp. 13-148, 213-217). The resulting appropriation obviously cannot be condemned as "not an exercise of judgment." *Helvering v. Davis*, 301 U. S. 619, 640. Equally clear is the conclusion that the judgment was properly exercised.

The Denison reservoir is designed primarily to control floods on the Red River. The maximum probable flood on this river is considerably in excess of any that has yet occurred. But even the

past floods have inundated as much as 560,000 acres of cleared, agricultural lands and the maximum probable flood would cover 920,000 acres of such land (H. Doc. 541, pp. 4, 27-28, 70-71). Under the final specifications, the Denison project will fully regulate all floods of the size of any flood of record, including that of 1908, and approximately 520,000 acres of cultivated lands in four states would be protected even in the event of the maximum probable flood (Appendix D to Def. Proj., p. 2, *infra*, p. 107). Moreover, the reduction of flood hazards would result in an increase in agricultural pursuits, since the large acreage now lying dormant would be thrown into agricultural use (Appendix D to Def. Proj., p. 7, *infra*, pp. 108-109; H. Doc. 541, p. 70).

It is estimated that the *annual* benefits resulting from the flood protection afforded by the Denison project will total \$1,613,080.00 (Appendix D to Def. Proj. p. 3, *infra* p. 108; cf. Appendix H, H. Doc. 541, *infra* p. 96). The largest single item going to make up this total is the annual benefit to crops. Flood damages to crops are now so extensive that they constitute a major economic problem to landowners, tenants, and sharecroppers (H. Doc. 541, p. 29). In addition, substantial annual benefits are assignable to the protection of livestock, farm machinery, business and residential buildings, factories, streets, sewers, highways, bridges, railroads, ferries, and telephone and power lines (Appendix H, H. Doc. 541, *infra* p. 96).

Also significant, although of such a nature that it cannot be assigned a monetary value, is the effect of the Denison reservoir in guarding against a coincidence of Red River floods with those on the Mississippi River. The Court at the last Term examined the elaborate and extensive plan for the control of Mississippi River floods. See Supplemental Brief for petitioner, *United States v. Sponenbarger*, No. 72, October Term 1939. It is beyond question desirable that there be means of holding back flood waters of the Red River which might otherwise be added to the Mississippi flood, with disastrous consequences to the lower Mississippi Delta (See H. Doc. 541, p. 86 and Appendix D to Def. Proj., p. 7, *infra* p.109).

In addition to affording this protection, the construction of the project will provide work for relief of the unemployed "in the seriously depressed areas in the vicinity of the reservoir" and will prevent "losses to agricultural employment, industry, and transportation when flood losses greatly reduce the cotton yield." Again, the development of power will provide a considerable stimulus to the industrial development of the surrounding area, and give it a needed diversification of employment. It will make possible the "retirement of large tracts of submarginal lands in the reservoir area with possibility of resettlement in downstream tracts now wooded or uncultivated due to annual flood hazard." It will be of "considerable benefit

for malaria control" which has been "a serious health problem for many years" (H. Doc. 541, pp. 39-40, 69, 77).

No less important to the general welfare, the project will be of value in regulating the stream flow for water supply, dilution of sewage, and prevention of pollution. The huge reservoir will afford recreational facilities and a sanctuary for wildlife; it will make available a large supply of electric power "in time of war or during other power emergencies of national or local extent." Finally, the project will be the means for the "prevention of possible loss of lives if and when a flood of the magnitude indicated as probable occurs" (H. Doc. 541, p. 77).

There is accordingly a wealth of evidence to support the judgment of Congress that construction of the Denison reservoir will provide for the general welfare. "The *parens patriae* has many reasons—fiscal and economic as well as social and moral—for planning to mitigate disasters that bring these burdens in their train." *Steward Machine Co. v. Davis*, 301 U. S. 548, 587.

There can, of course, be no contention that the Denison reservoir does not provide for the general welfare because its benefits are confined to the four states protected and served by the project. The Denison reservoir is an integral part of the whole Mississippi River flood-control plan, offering protection to the inhabitants of the entire

valley, and is an element in the national program of flood control reaching throughout the country (*supra*, pp. 3-9). As was said in *Greenwood County v. Duke Power Co.*, 81 F. 2d 986, 994 (C. C. A. 4):

* * * No matter how clearly national the end to be attained by expenditures under the general welfare clause, or how appropriate the means adopted for the attainment of that end, each individual expenditure must needs have a local as well as a national character; for money cannot be expended in vacuo, and no project can be imagined, even though part of a national program, which will not have a local situs.

There can be no general welfare which is not an aggregation of local welfares: the nation is not a metaphysical abstraction but the sum of its citizens.

C. THE WELFARE CLAUSE AUTHORIZES ACQUISITION AND CONSTRUCTION AS WELL AS EXPENDITURE

The Denison dam and reservoir, as we have shown, is an unassailable object of expenditure under the welfare clause. There remains only the question whether there is anything in the method by which the purpose is to be accomplished that removes the project from the authority granted by the welfare clause.

Appellant concedes (Br. 54) that Congress may tax and spend for the general welfare but asserts that the welfare clause is not a "substantive grant

of authority" to Congress. The precise nature of this contention is not clear, particularly since this Court has characterized the power to tax and appropriate for the general welfare as "a substantive power" and has said that it is "separate and distinct from those later enumerated." *United States v. Butler*, 297 U. S. 1, 65-66. If appellant means that the welfare clause gives Congress no general power to regulate for the promotion of the general welfare, its contention is irrelevant because, in authorizing the Denison Project, Congress did not attempt to regulate, interfere with, or control any matter reserved to the states. Cf. *United States v. Butler*, 297 U. S. 1, 68; *Carter v. Carter Coal Co.*, 298 U. S. 238, 289-292.

However, it may be that appellant contends that the power to spend embraces only the disbursement of federal funds and does not include the power to acquire or construct property to be devoted to the general welfare. Any such objection is patently untenable. The United States could make only halting provision for the general welfare if it could not receive anything for the funds which it expended. Indeed, it is impossible even to make pure expenditures without the acquisition or construction of property, such as bookkeeping apparatus, furniture, buildings, and land.

To read the broad authority of the welfare clause as limited simply to expenditure, divorced from the acquisition or construction of property by which

provision for the general welfare might be made effective, would import into the Constitution a self-defeating nicety, justified by neither the language nor the purpose of the clause. Certainly this Court would give short shrift to any contention that the power to "lay and collect taxes * * * and provide for the common defence" is restricted to the power to spend money for the common defense and does not include the power to acquire property, equipment, and ordnance of all types necessary for the effective operation of the military and naval forces of the nation. The "general welfare" clause is a cognate provision to the "common defence" clause and is, of course, to be similarly construed.

In this connection it should be noted that the Circuit Court of Appeals for the Sixth Circuit has recently sustained under the general welfare clause the right of the Federal Government to acquire land in Ohio for the construction of a model housing community which was designed to provide homes for some 732 families and to furnish work for the unemployed in a time of economic stress. *Bastian v. United States*, C. C. A. 6, No. 8433, decided April 8, 1941.²⁵

²⁵Two earlier decisions to the contrary, *Franklin Township v. Tugwell*, 85 F. 2d 208 (App. D. C.) and *United States v. Certain Lands in City of Louisville*, 78 F. 2d 684 (C. C. A. 6), certiorari granted, 296 U. S. 567, dismissed on motion of petitioner, 297 U. S. 726, seem now to be definitely discredited. They have been severely criticized and appear to

Nor does the fact that acquisition of land through eminent domain is contemplated affect the validity of the Denison Project under the general-welfare clause. It is well established that the United States, as an incident of its sovereignty within the field of its delegated powers, possesses the power of eminent domain and may use that power to acquire land whenever it is necessary or appropriate to do so in the exercise of any of the powers granted by the Constitution.— *Kohl v. United States*, 91 U. S. 367, 371; *Cherokee Nation v. Southern Kansas Railway Co.*, 135 U. S. 641, 656; *Luxton v. North River Bridge Co.*, 153 U. S. 525, 529–530; *Chappell v. United States*, 160 U. S. 499, 509–510; *United States v. Gettysburg Electric Ry.*, 160 U. S. 668, 679.

The power of eminent domain finds its most explicit source in the concluding clause of Section 8 of Article I, which grants all powers necessary and proper to carry into execution the “foregoing powers.” The power to tax and to spend is clearly one of the “foregoing powers.” There can, there-

be inconsistent with the decisions of this Court in the *Butler* and *Social Security* cases, *supra*. See Corwin, *Constitutional Aspects of Federal Housing* (1935) 84 U. Pa. L. Rev. 131; (1937) 50 Harv. L. Rev. 802, 805–813; (1935) 35 Col. L. Rev. 284–285; (1935) 33 Mich. L. Rev. 957–960; (1935) 11 Wis. L. Rev. 113–115; (1936) 13 N. Y. U. L. Q. Rep. 285–287. See also Nichols, *The Meaning of Public Use in the Law of Eminent Domain*, 20 Boston U. L. R. 615, 637 (1940); Nicholson, *Recent Decisions on the Power to Spend*, 12 Temple L. Q., 435, 458 (1938).

fore, be no doubt that as a matter of constitutional construction the power of eminent domain attaches to activities under the welfare clause equally with those under the other powers enumerated in Section 8.

The answer is equally clear if the question be phrased in terms of the practical requirements of government. This Court has long since set out the considerations of expediency and policy which make imperative the power of eminent domain. It said, in *Kohl v. United States*, 91 U. S. 367, 371-372:

Such an authority is essential to its independent existence and perpetuity. These cannot be preserved if the obstinacy of a private person, or if any other authority, can prevent the acquisition of the means or instruments by which alone governmental functions can be performed. * * * If the right to acquire property for such uses may be made a barren right by the unwillingness of property holders to sell, or by the action of a State prohibiting a sale to the Federal government, the constitutional grants of power may be rendered nugatory, and the government is dependent for its practical existence upon the will of a State, or even upon that of a private citizen. This cannot be. * * * The right is the offspring of political necessity; and it is inseparable from sovereignty, unless denied to it by its fundamental law.

All of these considerations apply with equal force to the exercise of the power to condemn as used to effectuate the taxing and spending power. One of the most important attributes of the power to spend is the power to acquire property and, as this Court suggested in *Kohl v. United States*, 91 U. S. 367, 371, this latter power "may be rendered nugatory" if the government does not possess the power of eminent domain. Thus, the construction of public works often requires the acquisition of large areas consisting of numerous separately owned parcels of real estate. This is particularly true of reservoirs for flood-control projects. If voluntary purchase is the only method of acquisition open to the United States, one landowner may block an entire project. The absence of the right of eminent domain would leave the government only the choice of paying whatever price the landowner might fix, no matter how exorbitant, or of abandoning the project." Furthermore, in many cases acquisition by eminent domain is the only practicable method which will give the United States clear and certain title.

If it be that the decisions of this Court have not settled the question beyond the possibility of dis-

* There would seem to be no warrant for proceeding without prior acquisition of the land and leaving the landowner to bring suit for just compensation on an implied contract or under the Fifth Amendment. That type of taking is permissible and suit is possible, only when there is power in the Government to condemn.

pute, they do point with unmistakable clarity to the conclusion we urge. No case has intimated that eminent domain could not be used in exercise of the welfare powers. On the contrary, a number have indicated that the power of eminent domain attaches to all federal powers.

In *Luxton v. North River Bridge Co.*, 153 U. S. 525, 529, this Court said that the United States could exercise the power of eminent domain "when- ever it becomes necessary, for the accomplishment of any object within the authority of Congress." Again, in *Cherokee Nation v. Southern Kansas Railway Co.*, 135 U. S. 641, 657, this Court declared that property could be taken by the United States "for such objects as are germane to the execution of the powers granted to it."

More directly in point is *United States v. Gettysburg Electric R'y*, 160 U. S. 668. There this Court appears definitely to have taken the view that the power to tax and spend carries with it the power of eminent domain. In that case the question was whether the United States could condemn land at Gettysburg, Pennsylvania, for the purpose of preserving the battlefield and marking the positions occupied by different bodies of troops in such a way as to assist the study and correct understanding of the battle. This Court upheld the power of the United States to condemn land for those purposes. It said (p. 681):

And also, in our judgment, the government has the constitutional power to condemn the land for the proposed use. It is, of course, not necessary that the power of condemnation for such purpose be expressly given by the Constitution. The right to condemn at all is not so given. It results from the powers that are given, and it is implied because of its necessity, or because it is appropriate in exercising those powers. Congress has power to declare war and to create and equip armies and navies. *It has the great power of taxation to be exercised for the common defense and general welfare. Having such powers, it has such other and implied ones as are necessary and appropriate for the purpose of carrying the powers expressly given into effect.* [Italics supplied.]

It is doubtless true that in the *Gettysburg* case the Court did not rely exclusively on the power of Congress to levy taxes and appropriate the proceeds to provide for the general welfare, but relied in part upon the war power or an aggregate of powers. But it is equally true that the Court definitely linked the power of eminent domain with the taxing and spending power. The decision was so understood in *Roe v. Kansas*, 278 U. S. 191, 193. In any event, the *Gettysburg* case is entirely apposite to the present one, since here the Government also relies upon the exercise of an aggregate of powers—the power to spend for the general welfare and the commerce power.

Our conclusion also finds ample support in the decisions of lower federal courts. *Oklahoma City v. Sanders*, 94 F. 2d 323, 327 (C. C. A. 10); *In re United States*, 28 F. Supp. 758, 762-765 (W. D., N. Y.); *United States v. Eighty Acres of Land*, 26 F. Supp. 315, 320-322 (E. D., Ill.). See also *United States v. Dieckmann*, 101 F. 2d 421, 424 (C. C. A. 7); *United States v. 546.03 Acres*, 22 F. Supp. 775 (W. D., Pa.). Cf. *Bastian v. United States*, C. C. A. 6, No. 8433, decided April 8, 1941.

It is not true, as appellant suggests (Br. 54), that if the general welfare clause be construed to confer upon Congress power to authorize construction of the Denison Project, "the power of Congress is unlimited and the remainder of the Constitution is largely surplusage." The power to expend money is necessarily only one of the powers of government and, indeed, because of the absence of sanctions and the practical limitations upon the money available for expenditure, it is one of the most restricted powers; the principal power of any government is the power to regulate. Recognition that Congress may expend money for any purpose which it deems to be in the public interest neither detracts from the need for its power to regulate nor places a restriction upon the field reserved for state regulation. Within its field of operation, the only restriction upon the power to spend may be the requirement that the object of the expenditure promote the "general welfare." The important

consideration, however, is that the field in which the power operates is in providing for the general welfare *through the expenditure of money*. Even though there is no very definite limit upon the operation of this power within its field, the scope of that field insures that the general welfare power is in no way inconsistent with, or in derogation of, the constitutional division of regulatory functions between state and nation.

IV

THE TENTH AMENDMENT IS NOT VIOLATED

The complaint (R. 12) and appellant's brief (pp. 55-58) place an undefined reliance upon the Tenth Amendment. It is argued that (1) the appellant will lose jurisdiction over the lands taken, (2) its political subdivisions will be deprived of the right to tax those lands, (3) 40 miles of its boundary will be obliterated, and (4) the project will conflict with its water conservation program.

We have shown that the Denison project constitutes an exercise of the powers granted Congress to regulate interstate commerce and to spend in aid of the general welfare. This completely disposes of the contention that the Tenth Amendment is violated. *United States v. F. W. Darby Lumber Co. et al.* No. 82 this Term, decided February 3, 1941; *Opp Cotton Mills, Inc. v. Wage and Hour Div. Dept. Labor*, No. 330 this Term, decided Feb-

ruary 3, 1941; *United States v. Appalachian Power Co.*, 311 U. S. 377, 428-429.

Moreover, it being conceded (R. 26) that if the Act in question is constitutional the United States may acquire all the necessary lands by condemnation proceedings,⁵⁷ none of the alleged injuries of which the appellant complains has any bearing upon the validity of the project.

1. It is to be noted at the outset that there will be no loss of political jurisdiction over the lands taken except with the consent of the State. Article I, section 8, clause 17 of the Constitution.

2. The next objection is in effect that the State prefers the lands to remain in private ownership, in order that the tax revenues of its subdivisions will not be reduced. But there is no charge that any property owner will not receive just compensation, and the single purpose of the Fifth Amendment of the Constitution is to leave whole a dispossessed property owner. The possible effect upon tax revenues of substituting just compensation for real property is a matter inherent in any eminent-

⁵⁷ The specific concession that the federal government has full power to condemn land owned by the State is in accord with well-settled authority. *Wayne County v. United States*, 53 C. Cls. 417, affirmed 252 U. S. 574; cf. *Town of Bedford v. United States*, 23 F. (2d) 453 (C. C. A. 1); *United States v. Gettysburg Electric R'y*, 160 U. S. 668, 685; *Monongahela Bridge v. United States*, 216 U. S. 177; *Stockton v. Baltimore & N. Y. R. Co.*, 32 Fed. 9 (C. C. N. J.); see 1 Nichols, *Eminent Domain* (2d ed., 1917), p. 113; *Oherokee Nation v. Southern Kansas Railway Co.*, 135 U. S. 641, 656.

domain proceeding. In *Florida v. Mellon*, 273 U. S. 12, 17, this Court rejected the contention that a state could halt the exercise of a federal power by pointing to a diminution of its tax revenues, saying:

If the act interferes with the exercise by the state of its full powers of taxation or has the effect of removing property from its reach which otherwise would be within it, that is a contingency which affords no ground for judicial relief. The act is a law of the United States made in pursuance of the Constitution, and, therefore, the supreme law of the land, the constitution or laws of the states to the contrary notwithstanding. Whenever the constitutional powers of the federal government and those of the state come into conflict, the latter must yield. *Ex parte Virginia*, 100 U. S. 339, 346; *Brown v. Walker*, 161 U. S. 591, 606; *Cummings v. Chicago*, 188 U. S. 410, 428; *Lane County v. Oregon*, 7 Wall. 71, 77.

3. The so-called "obliteration" of the State's boundary, of course, adds nothing. It would be a novel doctrine which permitted the federal government to take any necessary land by eminent domain except that which chanced to lie along a State boundary.

4. Appendix 3 to appellant's brief (pp. 84-87) sets out the statutory scheme by which the water resources of the State are to be conserved and developed. It appears that the proposed dam is not

deemed an interference because of any engineering effect of the project, but simply because it has not been authorized by the Oklahoma Planning and Resources Board. (See Br. 56-57; complaint, R. 11.)

It is, however, settled that the State cannot complain merely of a disregard of its water program. *New Jersey v. Sargent*, 269 U. S. 328, 338; *Arizona v. California*, 298 U. S. 558, 566, 568. And even if an actual conflict of federal and state water programs were alleged, that of the State must fall before the legislation of the United States. This has long been settled with respect to the federal power over navigable waters, *New Jersey v. Sargent*, *supra*, 337, and cases cited, and as to federal power over nonnavigable streams when exercised in aid of downstream navigation, *United States v. Rio Grande Irrigation Co.*, 174 U. S. 690, 703-704, 708. It has been shown that this is such a project. And, by precise parity of reasoning, the same result must follow if the project be viewed as undertaken under the welfare clause alone.

CONCLUSION

The Flood Control Act of June 28, 1938, insofar as it provides for the construction of the Denison Dam and Reservoir, is clearly constitutional either as an exercise of the power of Congress to legislate for the benefit of navigation and the protection of interstate commerce or to spend public funds for

the promotion of the general welfare. Accordingly, the acts of the appellees pursuant to its terms do not give rise to a cause of action.

It is, therefore, respectfully submitted that the judgment of the district court denying the injunction and dismissing the complaint should be affirmed.

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APRIL 1941.

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APPENDIX A

STATUTORY PROVISIONS

The pertinent provisions of the Act of June 22, 1936, C. 688, 49 Stat. 1570, are as follows:

SECTION 1. It is hereby recognized that destructive floods upon the rivers of the United States, upsetting orderly processes and causing loss of life and property, including the erosion of lands, and impairing and obstructing navigation, highways, railroads, and other channels of commerce between the States, constitute a menace to national welfare; that it is the sense of Congress that flood control on navigable waters or their tributaries is a proper activity of the Federal Government in cooperation with States, their political subdivisions, and localities thereof; that investigations and improvements of rivers and other waterways, including watersheds thereof, for flood-control purposes are in the interest of the general welfare; that the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected.

SEC. 2. That, hereafter, Federal investigations and improvements of rivers and other waterways for flood control and allied purposes shall be under the jurisdiction of

and shall be prosecuted by the War Department under the direction of the Secretary of War and supervision of the Chief of Engineers, and Federal investigations of watersheds and measures for run-off and waterflow retardation and soil erosion prevention on watersheds shall be under the jurisdiction of and shall be prosecuted by the Department of Agriculture under the direction of the Secretary of Agriculture, except as otherwise provided by Act of Congress; and that in their reports upon examinations and surveys, the Secretary of War and the Secretary of Agriculture shall be guided as to flood-control measures by the principles set forth in section 1 in the determination of the Federal interests involved: *Provided*, That the foregoing grants of authority shall not interfere with investigations and river improvements incident to reclamation projects that may now be in progress or may be hereafter undertaken by the Bureau of Reclamation of the Interior Department pursuant to any general or specific authorization of law.

* * * * *

SEC. 7. The Secretary of War is hereby authorized and directed to continue surveys, studies, and reports at the following-named localities, where, according to the surveys and estimates already made, opportunities appear to exist for useful flood-control operations with economical development of hydroelectric power whenever sufficient markets to absorb such power become available, the cost of these surveys to be paid from appropriations heretofore or hereafter made under the authorization in this Act or subsequent similar Acts:

* * * * *

Denison Reservoir, Texas.

SEC. 9. The sum of \$310,000,000 is authorized to be appropriated for carrying out the improvements herein and the sum of \$10,000,000 is authorized to be appropriated and expended in equal amounts by the Departments of War and Agriculture for carrying out any examinations and surveys provided for in this Act and other Acts of Congress: *Provided*, That not more than \$50,000,000 of such sum shall be expended during the fiscal year ending June 30, 1937: *Provided further*, That for the relief of unemployment, in addition to the regular appropriation, persons may be employed on such works of improvement and the compensation of said persons when so employed shall be paid from the funds available to the Works Progress Administration for the continuance of relief and work relief on useful projects.

Pertinent provisions of the Act of June 28, 1938, c. 795, 52 Stat. 1215, are as follows:

SEC. 4. That the following works of improvement for the benefit of navigation and the control of destructive floodwaters and other purposes are hereby adopted and authorized to be prosecuted under the direction of the Secretary of War and supervision of the Chief of Engineers in accordance with the plans in the respective reports hereinafter designated: *Provided*, That penstocks or other similar facilities adapted to possible future use in the development of hydroelectric power shall be installed in any dam herein authorized when approved by the Secretary of War upon the recommendation

of the Chief of Engineers and of the Federal Power Commission.

The Denison Reservoir on Red River in Texas and Oklahoma for flood control and other purposes as described in House Document Numbered 541, Seventy-fifth Congress, third session, with such modifications thereof as in the discretion of the Secretary of War and the Chief of Engineers may be advisable, is adopted and authorized at an estimated cost of \$54,000,000.

The Government of the United States acknowledges the right of the States of Oklahoma and Texas to continue to exercise all existing proprietary or other rights of supervision of and jurisdiction over the waters of all tributaries of Red River within their borders above Denison Dam site and above said dam, if and when constructed, in the same manner and to the same extent as is now or may hereafter be provided by the laws of said States, respectively, and all of said laws as they now exist or as same may be hereafter amended or enacted and all rights thereunder, including the rights to impound or authorize the retardation or impounding thereof for flood control above the said Denison Dam and to divert the same for municipal purposes, domestic uses, and for irrigation, power generation, and other beneficial uses, shall be and remain unaffected by or as a result hereof. All such rights are hereby saved and reserved for and to the said States and the people and the municipalities thereof, and the impounding of any such waters for any and all beneficial uses by said States or under their authority may be as

freely done after the passage hereof as the same may now be done.

SEC. 9. That the sum of \$375,000,000 is hereby authorized to be appropriated for carrying out the improvements herein over the five-year period ending June 30, 1944, and the sum of \$10,000,000 additional is authorized to be appropriated and expended in equal amounts by the Departments of War and Agriculture for carrying out any examinations and surveys provided for in this Act and any other Acts of Congress, to be prosecuted by said Departments. The sum of \$1,500,000 additional is authorized to be appropriated and expended by the Federal Power Commission for carrying out any examinations and surveys provided for in this Act or any other Acts of Congress, to be prosecuted by the said Federal Power Commission.

Pertinent provisions of the Act of October 17, 1940, Public, No. 868, c. 895, 76th Cong., 3rd Sess., are as follows:

SEC. 4. The project for the Denison Reservoir on Red River in Texas and Oklahoma, authorized by the Flood Control Act approved June 28, 1938, is hereby declared to be for the purpose of improving navigation, regulating the flow of the Red River, controlling floods, and for other beneficial uses.

APPENDIX B

APPENDIX H TO HOUSE DOCUMENT 541

The pertinent portions of Appendix H, referred to but not printed in House Document No. 541, are as follows:

III. FLOOD DAMAGE

1. *Introduction.*—The principal loss caused by floods in the Red River Valley is that to crops. The usual flood occurs late enough in the season to prevent a new crop of cotton from maturing and for other crops, on the average, not more than half a crop can be harvested after a flood. Some loss of this kind as well as bank caving and various intangible losses occur even with minor floods. If the so called "project" flood or maximum probable flood were to occur under present conditions the loss would be enormous. Bridges would be washed out, levee districts and towns inundated, and much property damage done. The following paragraphs describe the estimates of the monetary value of these losses.

2. *Crop losses.*—In determining the average crop production per acre, actual figures were obtained from the County Agents of Lamar, Red River, and Bowie Counties, Texas; McCurtain County, Oklahoma; and Little River and Miller Counties, Arkansas. The figures were compiled from representative farms in each county and pertained only to land lying in the alluvial valley. In addition to these statistics, numerous representative farmers

operating in Texas, Oklahoma, Arkansas, and Louisiana, were interviewed and figures were obtained which showed the actual production. These records showed the average production to be as follows:

Cotton-200 pounds per acre above Index.

Cotton-250 pounds per acre below Index.

Corn-30 bushels per acre, entire valley.

Mixed hay-1 ton per acre, entire valley.

Vegetables-variable.

As it was impracticable to use every individual item in compiling this estimate, only the major crops were considered, and only two headings were used for them, namely: "Cotton" and "Other Crops." However, as "Cotton Seed" represented a major item by itself, there being approximately one-half ton of seed to a bale of cotton, it was decided to assign it a separate heading.

Crop acreage figures, furnished by the various County Agents in the three states affected, indicate that 60 per cent of the cultivated area between Denison and Index is normally planted in cotton, the remaining 40 per cent being in other crops. For the area between Index and Alexandria the percentages are 70 per cent and 30 per cent respectively. This additional 10 per cent in cotton crop for the lower valley is explained by the fact that the levees offer protection which makes an increase in the major crop profitable.

The price used for cotton was arrived at thus: After the war, cotton was selling for around fifteen to eighteen cents per pound. However, during the depression years, cotton sold as low as four and five cents per pound. As neither the high nor low prices were representative of normal years, a

price of thirteen cents per pound was assumed to be a fair figure.

As the five to six-dollar per bale cost of ginning was not included in the charges against cotton production, and as the farmer usually pays the ginner for the cost of ginning with cotton seed, this expense was deducted from the seed value.

In 1936, cotton seed sold for thirty-four to thirty-five dollars per ton. In March 1937 it was selling for forty dollars per ton, but during depression years it sold at a much lower price. Thirty-two dollars per ton was selected as a conservative figure.

As the ratio of cotton seed to lint is 2 to 1, a 500 pound bale of cotton will produce 1,000 pounds of seed or $\frac{1}{2}$ ton.

One-half ton of seed at \$32 less \$6 for ginning equals \$10, which is the net value used for the seed from one bale of cotton. This is equivalent to \$20 per ton of seed. The value of "Other Crops" per acre was determined as follows:

80 per cent of area in corn, wheat, oats, and rye, @ \$25 per acre	\$20.00
1 per cent of area in vegetables, @ \$100 per acre	1.00
4 per cent of area in alfalfa @ \$80 per acre	3.25
15 per cent of area in mixed hay @ \$12 per acre	1.80
Total average per ac. "Other Crops"	26.00

As only one-half of the crop was assumed to be lost, one-half of \$26, or \$13 per acre, was used.

Actual records at Denison cover a period of 30 years, 1906-1936, inclusive. During this period three floods occurred that would cause damage; namely: 1908, 1915, and 1935. As the 1915 flood had several peaks and a study of damage attributed to flow above Denison was very difficult to determine, it was assumed that it caused a damage equal to

that of 1935. Therefore, the annual damage by floods for the period of record was 1908 damage plus 1935 damage times two divided by 30.

The loss caused by the Project Flood assumed to occur once in the economic life of the Project, or once in fifty years, was divided by fifty in order to determine the annual loss.

The greater portion of the uncultivated area in the valley is used, almost exclusively, for pasturage. When inundated by floodwaters the timber is not damaged, but the grass is covered with silt, making it necessary to feed the livestock for an indefinite period; low places are left full of water, which at times require months to dry up; and large quantities of drift are deposited which must be cleaned up. It is difficult to place an exact amount on these damages, but the various studies indicate that annual benefit of 4 cents per acre is a fair figure.

A summary of the computations of average annual crop loss is given in Table No. 1.

3. *Flood damage other than crops*—The project flood is of such nature and size that if it is allowed to go down the river uncontrolled it will cause enormous damage to all that lies in its path. The 1908 flood uncontrolled would also cause damage, but to a much lesser degree since many structures and improvements have been built with the 1908 high water elevations as a guide.

The following flood damage figures are in most cases only for the Project Flood which was considered to occur once in 50 years. Where similar damage to a lesser degree occurs for the other floods studied it is incorporated and the amount noted as such.

4. Business buildings (buildings and merchandise).—The business section of Alexandria would be covered by seventeen feet of water and it is located so that there would be a strong current through it. Also a number of small towns would be inundated. The probable loss to buildings and merchandise was estimated at \$1,200,000.

Annual.....\$24,000

5. Residence buildings (buildings and contents).—This loss was divided into city and rural sections as noted below.

Cities

Shreveport, 50% inundated.
Alexandria, 100% inundated.
Fulton; Garland, Conshatta, Bossier City, Colfax,
and other small towns inundated.

Population

Shreveport, 50%.....	40,000
Alexandria.....	24,000
Other small towns.....	16,000
	<hr/> 80,000

80,000 ÷ 5 = 16,000 homes at \$125 damage to building and

\$75 damage to furniture.....\$3,200,000

Barksdale Field, Louisiana.....100,000

Farms:

500,000 acres, one building to 40 acres, 14,000 buildings at \$50.....	700,000
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Annual.....	4,000,000
	<hr/> 80,000

6. Factories and municipal plants.—Shreveport has a number of manufacturing plants that would come within the area flooded. Lumberyards and mills would be inundated at Alexandria. Damage to buildings, equipment, and materials was estimated at \$1,000,000. Annual \$20,000.

One-half the streets of Shreveport, all of the streets of Alexandria, and a number of small towns

along the river would be inundated. No damage was estimated for streets other than pavement. It was estimated that 90 miles of pavement would be damaged in the amount of \$5,000 per mile or, a total of \$450,000. Annual \$9,000.

7. *Sewers.*—Sewer systems in Shreveport, Alexandria, and Bossier City would be affected by the high water. The amount of damage was placed at \$150,000. Annual \$3,000.

8. *Highways.*—Between Fulton, Arkansas, and Alexandria, Louisiana, there is approximately 500 miles of paved or improved road that parallels or is adjacent to the Red River and is subject to overflow. Also there is approximately 12 miles of pavement crossing the alluvial valley at Fulton, Garland, and Shreveport. This pavement would be subject to rather heavy damage.

Fulton to Alexandria, 300 miles at \$2,500.....	\$750,000
Crossings at Fulton, Garland, and Shreveport, 12 miles at \$10,000.....	120,000
Total	\$870,000
Annual	17,400

One-half the streets of Shreveport, all of the streets of Alexandria, and a number of small towns has a number of manufacturing plants that would come within the area flooded. Damage to mills would be inundated at Alexandria. Damage to buildings, equipment and materials was estimated at \$1,000,000. Annual \$20,000.

TABLE No. 1.—Average annual crop damage prevented by reservoir on Red River at Denison, Tex.

Flood designation	Peak Discharge at Denison c. f. s.	Above index			Below index			Denison-Alexandria
		Cleared Acres Flooded	Cleared Acres Protected	Total Value of Protection	Cleared Acres Flooded	Cleared Acres Protected	Total Value of Protection	
Project								
Natural	1,245,000	253,468			628,746			
Modified	310,000	158,168	119,306	\$2,559,078	172,300	489,328	\$14,662,664	\$17,922,770
1906								
Natural	471,000	233,498			326,383			
Modified	55,000	15,316	218,189	\$4,061,124	147,440	178,713	\$5,994,226	10,455,355
1926								
Natural	198,000	182,168			172,300			
Modified	65,000	15,316	137,847	\$3,108,069	137,300	38,100	\$1,085,285	\$4,293,315

Annual crop damage		Average crop values per acre	Average crop values per acre
Project Flood:			
Total damage	\$17,222,770	60% of area in cotton: 2009 @ 134.....	70% of area in cotton: 2009 @ 134.....
Annual damage $\frac{1}{80}$	\$214,455	Cottonseed \$4 acre.....	Cottonseed \$5 acre.....
Damage in 30 years:			
1000.....	\$10,424,363	40% of area in other crops: \$20 per acre & 50% loss.....	30% of area in other crops: \$20 per acre & 50% loss.....
1000 $\times 2$	9,812,680		
Total.....	\$19,957,043	Average crop value per acre.....	Average crop value per acre.....
Annual $\frac{1}{80}$	\$249,326		
Wooded land, 770,350 acres, @ .44.....	30,414		
Total annual crop damage.....	\$1,007,515		

9. Bridges.—Costs of construction of the bridges were used where available. In other cases weights of material in bridges were computed or estimated and the value of the bridge found by arriving at a unit price per foot of length of bridge.

Approaches to the bridges include embankment and pavement or track subject to overflow by project flood. It was assumed all bridges down to and including Index, Arkansas, would be destroyed.

Highway bridges:

Denison	\$200,000
Sowells Bluff (under construction)	\$300,000
Arthur City	\$120,000
Index	\$180,000
	<hr/> \$800,000

Toll bridges at Telephone and Denison, Texas, including approaches

Highway approaches, four @ \$40,000

Railroad bridges:

Denison, M. K. T.	1,031 feet	
Carpenters Bluff, K. O. & G.	1,100 "	
Arthur City, Frisco	858 "	
Index, K. C. S.	1,200 "	
	4,189 feet at \$187	\$783,000
Railroad approaches, four @ \$30,000		\$120,000

Miscellaneous:

Cost of temporary structures, railroad	\$250,000
Cost of temporary structures, highway	\$150,000

Annual

10. Railroads.—The railroads would have heavy damage to track in the lower valley in addition to loss of bridges. A number of cars placed on bridges to weight them down would be lost, also freight in cars standing in yards would be damaged. This damage was estimated as follows:

Track adjacent to river, 250 miles @ \$5,000	\$1,250,000
Cars lost with bridges, 200 @ \$5,000	1,000,000

Loss to freight in yards, 200 @ 1,000,000 lbs. capacity, 5¢ lb., or \$5,000 per car.....	\$1,000,000
Total.....	8,250,000
Annual.....	65,000

11. Farm Machinery.—River water covering farm machinery would cause material damage, especially equipment such as tractors, motors, etc.

Tractors, approximately 1 to 1,000 acres—500 @ \$50.....	\$25,000
Machinery (mowing machines, binders, etc.).....	5,000
Miscellaneous (pumps, lighting units, etc.).....	20,000
Total.....	50,000
Annual.....	1,000

12. Livestock.—The project flood is of such magnitude that the majority of high points in the valley where stock would naturally be gathered would be completely inundated. As this flood would come with very little warning, time would not permit the removal of this stock to safety. The 1908 Hypothetical Flood, in all probability, would not create such an enormous loss to livestock as the majority would be able to reach the various islands left in the overflow. The Project Flood, therefore, is the only one being considered.

Mules and horses (approximately 20,000 in the valley): 1,500 lost @ \$100 each.....	\$150,000
Cattle (approximately 50,000 in the valley): 10,000 lost @ \$40 each.....	400,000
Hogs (approximately 15,000 in the valley): 3,000 lost @ \$5 each.....	15,000
Sheep and goats (approximately 15,000 in the valley): 3,000 lost @ \$4 each.....	12,000
Chickens and turkeys (approximately 210,000 in the valley): 105,000 lost @ 50¢ each.....	52,500
Total.....	622,500
Annual.....	12,500

13. Relief (care of destitute).—With the loss and destruction of practically the entire crop in the

valley, an enormous number of farm tenants would be made entirely destitute. As the tenant population is composed almost entirely of negro and poor white classification, they would, of a necessity, have to be placed on relief.

10,000 families for six months @ \$10 per month	\$800,000
Annual	12,000

14. *Ginning losses.*—The average cost of ginning was assumed to be \$6 per bale. This loss is directly chargeable against the flood because a loss of cotton means a corresponding loss to the ginner, for, had the cotton crop been made, he would have ginned it. The actual cost of fuel and damage to machinery, from ginning, was assumed to be \$1.50. This amount deducted from \$6.00 represents the anticipated loss per bale, or \$4.50.

Project Flood, 201,057 bales @ \$4.50	\$905,757
Annual	18,005
30-year damages, 200,621 bales @ \$4.50	902,795
Annual	30,085

15. *Loss to railroad companies (hauling cotton).*—The various railroad companies operating in the vicinity of the Red River valley anticipate a certain volume of business, each year, from this area, and consequently maintain the necessary facilities for handling it. In the event of a major flood, the crops are destroyed and the railroad loses the entire transportation. As Texarkana, Texas-Arkansas, is located approximately midway between Denison and Alexandria, it was assumed that the freight rate from there to the various destinations, particularly New Orleans, Louisiana, or Galveston, Texas, would be representative.

Project Flood:

Cotton, 201,057 bales at \$1.55 per bale.....	\$311, 638
Cottonseed, 100,529 tons at \$7.20 per ton.....	723, 809
Total	1, 035, 447
Annual	20, 709

30-year damages,

Cotton, 200,621 bales at \$1.55 per bale.....	310, 983
Cottonseed, 100,311 tons at \$7.20 per ton.....	722, 239
Total	1, 033, 202
Annual	34, 440

16. Loss to railroad companies (rerouting trains).—The project flood would be of such magnitude that every railroad bridge which crosses Red River would be washed out to and including the one at Index, Arkansas. This condition would necessitate the rerouting of trains until such time as suitable crossings could be erected. It is assumed that the nearest available crossing is at Fulton, Arkansas.

Denison, M. K. T., 10 trains per day at 500 miles each.....	5, 000
Carpenters Bluff, K. O. & G., 5 trains per day at 500 miles each.....	2, 500
Arthur City, Frisco, 5 trains per day at 350 miles each.....	1, 750
Index, K. C. S., 10 trains per day at 50 miles each.....	500
Total miles	9, 750
9,750 train miles at \$3.15 per mile for 30 days.....	\$321, 375
Annual	\$18, 428

17. Bank caving.—Bank caving occurs when the river is above one-half bankfull stage. From a study of levee practice in the lower river valley, a shift of one mile in thirty years is taken as an average. Regulation of the flow at Denison would probably affect the within-bank stage down to Fulton, Arkansas. Because of the inflow below Deni-

son, the reservoir will only reduce bank caving by 30 percent.

235 miles from Denison to Fulton.

$235 \times 640 \div 30 = 6,080$ acres average annual bank caving.

Reduction, $6,080 \times 30\% = 1,824$ acres at $\$30 = \$54,720$.

18. Telephone and power lines.—The telephone, telegraph, and power lines within the valley would receive considerable damage on account of poles and wire being broken down.

500 miles at \$100, including exchanges and distribution in towns	\$50,000
Loss of business	\$150,000
Total	\$200,000
Annual	\$4,000

19. Revetments, dikes, and retards.—Channel stabilization for the protection of the bridges at Arthur City, Index, and Fulton would be damaged or destroyed. The damage is estimated at \$40,000; annual, \$800.

20. Avulsions.—The survey made by the U. S. Boundary Commission, in compliance with orders issued by the U. S. Supreme Court in 1925, showed all cutoffs created by avulsions between Denison, Texas, and the Oklahoma-Arkansas state line between the years of 1844 and 1921. Using this record for a basis and extending the area to Index, Arkansas, damage was estimated at:

2,500 acres at \$15	\$37,500
Annual	\$750

21. Malarial control.—During the last few years the United States Government, cooperating with the various states and counties, has expended millions of dollars draining water holes, swamps, etc., in order to eradicate the mosquito for the purpose

of controlling malaria fever. This work consists principally of digging ditches, which are silted full and consequently lost whenever a flood occurs.

20 miles ditch at \$750 per mile x 22 counties	\$330,000
Annual benefits	\$3,600

Authorities on the subject claim that better than 90% of the entire population living in the Red River Valley are infected with malaria. Aside from the pain, discomfort, and reduction in efficiency, a real monetary loss results from doctors' bills and the cost of medicine. It is estimated that 9,000 persons should be annually relieved from the above expense at the rate of \$3.00 per capita.

22. *Enhanced property values.*—With the reservoir in operation a large amount of wooded land would be cleared and placed in cultivation. It is estimated that 30% of the timber land in the valley above Index, Arkansas, would be cleared almost immediately and thereby create an enhancement in value of \$25 per acre.

136,000 x 30% x \$25=	\$1,020,000
Annual at 5%=	\$51,000

It is also estimated that approximately 40,000 acres of marginal cleared land would be made more productive with an enhancement in value of \$25 per acre.

40,000 x \$25=	\$1,000,000
Annual at 5%=	\$50,000

23. *Ferries.*—All ferries on Red River between Denison and Fulton would be washed out or damaged materially.

10 ferries at average loss of \$300 each	\$3,000
Annual	\$60

24. Fences.—Drift and washouts would destroy or damage a considerable amount of fence.

1,000 miles at \$50 per mile	-----	\$50,000
Annual	-----	\$1,000

25. Intangible items.—(a) Boll weevil: This insect hibernates in old cotton stalks, brush, and other refuse and prospers in wet places. Statistics indicate that the cotton crop suffers the most from boll weevil after a flood.

(b) Johnson Grass: After the farmers have expended thousands of dollars over a period of years to eliminate this nuisance, a flood will occur and deposit additional seed, making it necessary to start all over again.

(c) Nut Grass: When the seed of this grass has been deposited on a farm by an overflow, the land is virtually ruined, as it is practically impossible to kill it.

(d) Loss to General Business: The merchants in the small towns lying adjacent to the valley, as well as those in the cities, anticipate a large volume of business from the farmer. This business is materially reduced after a major flood.

(e) Diseases: After every disaster from floods the prevention of disease develops into a major problem. The bodies of dead animals, the pollution of wells, and the accumulation of filth all have a tendency to aggravate this condition.

(f) Regulated Flow: After the construction of the Denison Dam a regular flow will be maintained in the entire river. This regulation will eliminate the drying up of the stream bed at certain periods of the year; it will furnish permanent watering

places for cattle throughout the valley, will supply sufficient water for irrigation purposes during drought years, and will reduce the pollution of the stream at the various sewerage disposal outlets.

(g) **Benefits from Tourist:** With the construction of the Denison Reservoir, various recreational facilities will be established bordering on and in the vicinity of the lake. Because of the comparatively short and mild winters, the climatic conditions are excellent. This condition will, naturally, have a tendency to induce tourists from every section of the country as well as thousands of people from nearby communities in both Texas and Oklahoma.

(h) **Confidence of People:** Under existing conditions in the valley, people with capital are unwilling to invest their money in developing or improving the land because of the uncertainty and frequency of the floods. Merchants are unwilling to furnish the farmer with more than a pittance for the same reason. As a result of this condition the development of the entire valley is retarded.

(i) **Pipe Line Crossings:** As the Red River flows through an oil and gas region, particularly in the Louisiana area, there are innumerable pipe lines crossing the river. The Project flood would undoubtedly destroy or damage all of these lines.

It is estimated that the total annual benefits for intangible items will amount to \$150,000.

The annual flood damages are summarized in Table No. 2, and the locations of areas protected are shown on Plate No. 1 of the main report.

TABLE No. 2.—Flood damages—Summary

Item	Annual damage
Cotton.....	701,417
Cottonseed.....	107,911
Other crops.....	167,393
Uncultivated land.....	30,814
1. Crops and uncultivated lands.....	\$1,007,535
2. Business buildings (buildings and merchandise).....	24,000
3. Residence buildings (buildings and contents).....	80,000
4. Factories and municipal plants.....	20,000
5. Streets.....	9,000
6. Sewers.....	3,000
7. Highways.....	17,400
8. Bridges.....	47,680
9. Railroads.....	65,000
10. Farm machinery.....	1,000
11. Livestock.....	12,380
12. Relief (Care of destitute).....	12,000
13. Ginning losses.....	48,188
14. Loss to railroad companies (hauling cotton).....	55,149
15. Loss to railroad companies (rerouting trains).....	18,428
16. Bank caving.....	54,720
17. Telephone and power lines.....	4,000
18. Revetments, dikes, and retards.....	800
19. Avalanches.....	750
20. Material control.....	33,600
21. Enhanced property values.....	101,000
22. Ferries.....	60
23. Fences.....	1,000
Subtotal.....	\$1,616,880
24. Intangible items.....	150,000
Grand total.....	\$1,766,880

APPENDIX C

The pertinent portions of the "Definite Project for Denison Dam and Reservoir—Red River" are as follows (pp. 10-14):

24. *General Considerations Effecting Economic Height of Dam.*—The determination of the economic height of dam involves consideration of the purposes for which the reservoir is to be created, the selected design, and the method of operation of the dam and reservoir for each of the uses for which it is constructed. As the Red River is a silt-bearing stream, it is necessary to allocate dead storage space where silt may be deposited without encroaching upon the desired uses of the reservoir. The mean flow of the river, 6000 c.f.s., for the period of record, is sufficient to provide for the production of hydroelectric energy. However, the variation in total annual runoff, 861,000 acre-feet minimum to 12,640,000 acre-feet maximum with 4,300,000 acre-feet average, requires considerable storage capacity allocated to power in order to regulate the generation of power to meet the market demand. The dead storage, which must be provided for the accumulation of silt, makes available sufficient head for the development of hydroelectric power, so that a failure to develop such power would represent an economic waste. The requirements for flood control can only be met by the reservation of a definite storage space above the power pool for the retention or retardation of floods of such magnitude as may reasonably be expected to

occur within the life of the project. The extent of flood-control storage to be provided is limited by the economic value of the protection afforded. A spillway with crest at the top of the flood-control pool is required to protect the dam from overtopping. Freeboard above the elevation of the top of the estimated maximum surcharge on the spillway is required as additional insurance against overtopping as the result of wave wash and wind. Accordingly, the economic height of dam is determined by adding to the power pool, the elevation of which is determined by the requirements for silt storage, power head, and draw-down, the required flood-control storage plus the surcharge and freeboard necessary to provide against overtopping the dam.

25. *Dead Storage*.—The term "dead storage" applies to the space in the Denison Reservoir for the deposit of silt which would otherwise reduce the efficiency and economic worth of the flood-control storage, since the Red River is a heavy carrier of silt. A study of all available information on the silting of reservoirs in the vicinity and on silt sampling of the Red River at Denison indicates that the siltation of the reservoir will be at the rate of approximately 19,600 acre-feet per year. (See Appendix A.) Due to the possible inaccuracies of the estimated silting rate, the provision of storage sufficient to accomodate the accumulation of silt over the economic life of the project at a rate of 20,400 acre-feet per year, which is in excess of the estimated silting rate by 800 acre-feet per year, is deemed advisable. This provides 1,020,000 acre-feet for dead storage, which allows for an average silting rate of 20,400 acre-feet per year for 50 years, the assumed economic life of the project.

The top elevation of the dead-storage pool for the deposit of silt will be Elevation 587.

26. *Power Storage.*—The amount of storage which can be economically allocated to the production of power depends on the ability of the power market to absorb the power during the useful life of the project. The Division of Power Resources and Requirements of the Federal Power Commission prepared a report in 1937 for use in the studies under the Report of Survey, H. D. 541, on the present and future power markets within reasonable transmission distance of the proposed Denison Dam. A résumé of this report is given in Appendix E. This report indicates that the probable market demand will be for peak power; a demand for which hydroelectric plants, having large storage, are well adapted. A review of the power market for the Definite Project study confirms the results of the market findings of the Federal Power Commission.

a. *Water Available.*—The mean flow of the Red River during the period of record, 1906 to 1937, inclusive, was 6,025 c. f. s. The water available for power during these years, neglecting evaporation, would have been for minimum year, 861,000 acre-feet; average year, 4,300,000 acre-feet; and maximum year, 12,640,000 acre-feet. Evaporation, during the period of record, would have caused a mean annual loss of 61 inches. See Appendix A.

b. *Power Pool Elevation.*—The Report of Survey, H. D. 541, recommended a power pool elevation of 620, with an operating head from 110 to 85 feet. This provided for an initial installation of 75,000 kw. with 20 percent load factor and an ultimate installation of 125,000 kw. with 11.7 percent load factor. The capacity of these installations

should be absorbed readily by the future demand of the power market. In order to determine the most economical power pool elevation, while still meeting the same market demand, a study was made with power pools at Elevations 620, 617, 615, and 613. These studies showed that fixing the power pool at Elevation 617 was the minimum elevation at which the desired capacity could be obtained from four units. The minimum elevation at which the desired capacity could be produced with five units was Elevation 613. However, the cost of the additional 20-foot conduit, intake structure, and other facilities for a fifth unit exceeded the saving in height of dam by more than \$550,000. Hence, the elevation of the power pool was fixed at Elevation 617, which is the minimum elevation that will permit the development of the installed capacity which can be absorbed by the potential market. The provision of 2,060,000 acre-feet of storage between Elevation 587, top of dead storage pool for the deposit of silt and Elevation 617, top of power pool is chargeable to power.

27. Flood Control Storage.—The amount of flood-control storage to be provided is dependent upon the economic returns or benefits which will result from the protection afforded by the flood storage provided. A complete discussion of flood frequency and damages is given in Appendix D. The annual benefits increase very little when floods greater than the 1908 flood, the maximum flood of record, are controlled, while the costs of providing this control increased rapidly. Accordingly, storage to control floods equal in magnitude to the 1908 flood, the largest of record, is all that can be economically justified.

a. Reservoir operations.—The operation of the reservoir during floods affects the volume of storage required to control the floods. The maximum outflow from the reservoir, which will not cause damage downstream, has been estimated to be 75,000 c. f. s. See Appendix A. Therefore, four 20-foot diameter conduits with combined capacity, with head at spillway crest, slightly in excess of 75,000 c. f. s. have been provided for flood control. These conduits will be opened whenever the reservoir rises above the maximum power pool, Elevation 617. As the pool increases, the gates will be regulated so that the combined outflow of the power conduits and flood-control conduits does not exceed 75,000 c. f. s. By closing the gates of the outlets as the spillway goes into action and thereby limiting the outflow to 75,000 c. f. s. the reservoir will rise about five feet before the spillway alone discharges 75,000 c. f. s. This would provide 760,000 acre-feet of additional effective flood regulatory storage above the spillway crest. The net effect of the additional 760,000 acre-feet of surcharge storage is to increase the flood regulating capacity of reservoir by 27.5 percent over the fixed capacity below the spillway crest.

b. Storage allocation.—In order to determine the amount of storage to allocate for flood control, the 1908 flood was routed through the reservoir with the pool at 617 at the start of the flood. The outlets were assumed to be operated as outlined in the preceding paragraph. The maximum pool elevation was determined to be Elevation 639.5. It was found that the cost of providing complete control of floods greater than the 1908 flood was more than the bene-

fits derived. Therefore, it was decided to provide complete control of that part of the 1908 flood which originated above the proposed dam. This placed the spillway at Elevation 640 and provided 2,745,000 acre-feet for flood control between the maximum power pool, Elevation 617, and spillway crest, Elevation 640.

28. *Surcharge and Freeboard.*—The requirements for power head, dead storage, and power regulations and flood-control storage have fixed the elevation of spillway crest at 640 feet. There remains, in fixing the height of dam, the determination of spillway surcharge for the design flood and the reservoir freeboard with wave action taken into consideration. As an initial step in fixing the Spillway Design Flood, the Computed Spillway Flood, as developed from the maximum storm prediction of the Weather Bureau, was routed through the reservoir with its volume increased by 25 percent as a factor of safety. The reservoir was assumed to have approximately one-half of its capacity for flood storage utilized by a previous flood; which, with the magnitude of the 1908 flood, the greatest on record, would have had to occur not more than 20 days prior to the following flood. This routing gave a maximum surcharge of 25 feet. Assuming a wind velocity of 68 miles an hour perpendicular to the spillway crest occurring at the time of maximum flood crest, an additional eight feet is required for freeboard. These requirements would add 33 feet to the spillway crest in fixing the height of the dam.

29. However, it is believed that the safety factors involved are unduly high for a drainage area of 39,000 square miles. Records

extending over a thousand years for the same size drainage area of the Danube River, fed by ice and snow-covered mountains, indicate a peak discharge of 496,000 c. f. s. While such data are not directly comparable nor conclusive, they do indicate that large drainage areas are not subject to flash flood conditions requiring high factors of safety in prediction. The estimated peak discharge of the 1908 flood, the greatest of record, was 470,000 c. f. s. This discharge was computed on the basis that the river section at the gaging station scoured to bed rock. Overbank flows were also computed through trestle openings and over the railroad embankment. Since no actual measurements were made, this discharge is subject to error. Hence, both volume and peak run-off of the 1908 flood as considered herein, also contain an ample allowance for indeterminate factors. Moreover, over a large drainage area, a flood warning system can be established readily to insure proper regulation of discharge conduits to obtain maximum reservoir efficiency. The U. S. Weather Bureau has submitted as the probable maximum storm, a total average rainfall depth over the basin of 11.3 inches in 96 hours. In developing this storm, the Weather Bureau based the 96-hour estimate on the July 1933 storm which occurred in Louisiana and East Texas. This storm was transposed and oriented over the basin to obtain a maximum average depth of rainfall of 9.95 inches. Therefore, it should be considered that the difference between 11.3 inches and 9.95 inches, represents a safety factor of at least 14 percent, without any consideration being given to the fact that such transposition undoubtedly involves a large unknown safety factor; since the max-

imum storm of record resulted from an average depth of rainfall of only 5.03 inches. The assumption that the reservoir is filled to half capacity by a preceding flood has a large factor of safety; the assumption that a wind velocity of 68 miles an hour may be developed at time of maximum crest also has a large factor of safety, as the storm creating flood conditions over a large drainage area may reasonably be expected to subside before peak discharge reaches the Denison Reservoir. Hence, the maximum probable flood was routed through the reservoir without an arbitrary increase in its volume for safety. This routing gives a maximum surcharge of 21 feet.

30. While the spillway is being designed to carry the maximum possible flood increased by 25 percent for safety; that is, with a surcharge of 25 feet, it is believed that the full requirements for safety against overtopping are met in fixing the height of dam above spillway crest as the surcharge required for this flood without the application of the 25 percent factor of safety. It is therefore recommended that the elevation of crest of dam be fixed at spillway crest 640 feet plus 30 feet; that is, at Elevation 670 feet.

The pertinent portions of Appendix D to the "Definite Project for Denison Dam and Reservoir—Red River" are as follows (pp. 1-3, 7, 10):

1. *Flood Damage.*—Periodic floods in the Red River Basin cause large damage, particularly to crops in the reaches of the river below Denison, Texas. The most damaging floods were those of 1908, 1915, 1935, and 1938; that of 1908 being the largest of record with a peak discharge of 470,000 c.f.s.

The floods are characterized by extensive overflow of the broad flood plains below Denison. Below Index, Arkansas, the flood plains are partially protected by levees which inclose most of the valuable agricultural lands. The limited height of these levees precludes complete protection and occasional overtopping of the levees, such as that caused by the floods of 1935 and 1938, results in considerable damage, largely to crops, in the leveed areas. A description of the larger floods and of the flood damages in the Red River Basin is contained in Report of Survey, H. D. 541.

2. *Annual Flood Damages—Report of Survey.*—Appendix H, H. D. 541, describes the method of computing annual flood benefits below the proposed Denison Dam. A summary of the annual flood benefits in the Report of Survey is given in Table D-1.

TABLE D-1

<i>Annual flood benefit—report of survey</i>	
Project flood:	
Total Crop Benefit	\$17,222,770
Annual Crop Benefit— $\frac{1}{30}$ of	17,222,770
	<u>\$244,455.00</u>
Benefit in 30 years:	
1908 (Frequency—30 Years)	\$10,455,352.00
1935 (Frequency—15 Years) = \$4,256,315 \times 2	8,512,630.00
	<u>18,967,982.00</u>
Annual = $\frac{1}{30}$ of \$18,967,982	632,266.00
Wooded land, 770,350 acres at 4¢	<u>30,814.00</u>
Total annual crop benefit	1,007,535.00
Total annual of other benefits	<u>809,345.00</u>
	1,816,880.00
Intangibles	<u>150,000.00</u>
Total annual benefit	<u>\$1,766,880.00</u>

The Report of Survey frequency study determined that the flood of 1908 would occur once in 30 years, and that of 1935 about once in 15 years. It was assumed that the maximum probable flood (Project Flood) would occur once within the life of the project; that is, once in 50 years. While these assumptions are not entirely rational, it must be realized that the period of record is insufficient to establish a reliable frequency of discharge and that the flood of record did occur once during a period of record of 33 years. The Project Flood (maximum probable flood) of 1,245,000 c. f. s., referred to and used in the Report of Survey, should not be confused with the Computed Spillway Flood described in Appendix A of this Definite Project. Table D-1 shows the Report of Survey method of computing the annual value of crop benefits for the 1935, 1908, and Project Flood. The annual benefits other than crop benefits estimated after a field reconnaissance of the areas and structures which would be effected by the Project Flood with and without the control provided by the Denison Dam were determined to be \$609,345.00. A further benefit of \$150,000.00 was added for intangibles which could not be definitely evaluated (H. D. 541). The resulting total annual damages which would be controlled by the dam and reservoir proposed in the Report of Survey amount to \$1,766,880.00. The extent of control was determined by assuming a dam with spillway crest at 660, power pool elevation at 620, and a total storage capacity of 5,870,000 acre-feet available for flood regulation. Outlets were assumed to discharge at 55,000 c. f. s. during the period of flood regulation.

3. Annual Flood Damage—Definite Project.—The lowering of the spillway crest

from Elevation 660 to Elevation 640 would result in a reduction in the volume of flood storage available for the regulation of the floods in the Red River Basin. This reduction of flood control capacity would effect the regulation only of those floods which are greatly in excess of the flood of 1908. As stated in Appendix A of the Definite Project, the dam and reservoir proposed in this Definite Project will fully regulate all floods of record, including that of 1908. Under the assumed method of operation, all outlets will be closed when the reservoir reaches spillway crest. With the outlets closed, the discharge over the spillway crest (Elevation 640) will not exceed bank capacity downstream of the dam until the surcharge exceeds a depth of 5 feet at the crest. This results in approximately 758,000 acre feet of additional flood regulating capacity between Elevations 640 and 645. In recomputing the value of the flood protection which would be provided by the dam and reservoir with spillway crest at 640, it should be noted that the same degree of protection—hence the same value of control—results for the 1908 and 1935 floods since all floods up to that of the magnitude of 1908 would be fully controlled. Frequencies in the Definite Project analysis are kept at the same values given in the Report of Survey, namely, 30 for the 1908 and 15 years for the 1915 and 1935 floods. Assuming the reservoir at power pool elevation 617 at the commencement of the flood, there will be a reduction in discharge of the maximum probable flood (Project Flood—Report of Survey) of approximately 700,000 c. f. s. This reduction in discharge would prevent the flooding of approximately 520,000 acres of cultivated land. Table D-2 below shows the

Report of Survey method of determining flood benefits which would result from a dam and reservoir with spillway crest at Elevation 640 and 2,745,000 acre feet of regulating capacity as proposed in this Definite Project.

TABLE D-2

Annual benefits—report of survey method of computation for definite project

Project flood:		
Total Crop Benefit.....	\$14,430,000	
Annual Crop Benefit=1/50 of \$14,430,000=		\$289,000
1908 Flood (Frequency—30 years)=	\$10,455,352	
1935 Flood (Frequency—15 years)		
\$4,256,315x2=	8,512,630	
Annual=1/30 of \$18,967,982=		\$632,266
Wooded land.....		30,814
Total annual crop benefit.....		\$952,080
Total annual of other benefits.....		511,000
		\$1,463,080
Intangibles.....		150,000
Total annual benefit.....		\$1,613,080

The total annual value of other benefits in Table D-2 above was determined by a proportionate reduction in the value used in the Report of Survey.

4. It will be noted from Tables D-1 and D-2 that there will be a reduction in the total annual flood benefits of \$1,766,880.00 minus \$1,613,080.00=\$153,800.00, as a result of reduction of the flood regulating capacity of the reservoir through lowering of the spillway crest of the proposed dam from Elevation 660 to 640.

* * * The Red River Basin is largely an agricultural community with approximately 884,030 acres out of 1,672,000 acres under cultivation. With the reduction of flood hazards, a large increase in agricul-

tural pursuits would result since the large acreage now lying dormant or allowed to remain wooded would be thrown into agricultural use with a large enhancement in property values. No credit has been given to this item since its value is almost indeterminable, but none the less, it can be considered a real benefit which bears strongly on the value of the Denison Dam and Reservoir for the control of floods. Relieved of the hazard of flood, the agriculturists in the Red River Basin will be in better position in the competing market to dispose of their agricultural products. Moreover, there will also result greater opportunity for the diversification of crops, with a resulting increase in crop and property values. A benefit which has not been evaluated is the reduction in Mississippi River flood stages by the Denison Dam and Reservoir. Floods in the Mississippi River usually occur in the spring as a result of flood flows out of the Ohio River. The coincidence of flood flows out of the Red River with the Mississippi River spring floods is rare. However, the early summer floods out of the Missouri River occasionally coincide in the Mississippi River with the summer floods out of the Red River. The control provided by the proposed Denison Dam and Reservoir on the Red River summer floods has been estimated to produce a reduction of approximately 0.6 feet at the mouth of Old River on the Mississippi. This reduction, while not substantial with respect to Mississippi flood stages is important when flood crests seriously tax the Mississippi levee system.

14. *Effective Flood Control Storage above Spillway Crest.*—A safety factor in regard to the reservoir design flood and for the storage

of larger floods is provided by closing the gates when the spillway discharge reaches conduit capacity, as a surcharge of approximately 5 feet over the spillway is required for spillway discharge to reach this amount. This 5 feet of surcharge adds 758,000 acre-feet for flood storage, approximately 28 percent of the design capacity. Moreover, the design flood has been superimposed on a power pool already at maximum elevation. At times, during the operation of the power pool, it will be drawn down to a maximum of 20 feet. A drawdown of only half of this amount would provide an additional storage capacity of 855,000 acre-feet, approximately 31 percent of the design flood storage. Hence, it is clear that the proposed storage is ample in volume to safely control the maximum flood of record, which occurred in 1908, and most probably to control floods of somewhat greater volume.

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SUPREME COURT OF THE UNITED STATES.

No. 832.—OCTOBER TERM, 1940.

State of Oklahoma, *ex rel.* Leon C.
Phillips, Governor of the State of
Oklahoma, Appellant,

vs.

Guy F. Atkinson Company, Cleon A.
Summers, United States Attorney
for the Eastern District of Okla-
homa, et al.

Appeal from the District
Court of the United
States for the Eastern
District of Oklahoma.

[June 2, 1941.]

Mr. Justice DOUGLAS delivered the opinion of the Court.

This case involves primarily the constitutionality of the Act of June 28, 1938 (52 Stat. 1215) insofar as it authorizes the construction of the Denison Reservoir on Red River in Texas and Oklahoma.¹

The bill in equity was filed by the State of Oklahoma seeking to enjoin the construction of any dam across Red River within the

¹ The Act provides in part:

"Sec. 4. That the following works of improvement for the benefit of navigation and the control of destructive floodwaters and other purposes are hereby adopted and authorized to be prosecuted under the direction of the Secretary of War and supervision of the Chief of Engineers in accordance with the plans in the respective reports hereinafter designated: *Provided*, That penstocks or other similar facilities adapted to possible future use in the development of hydroelectric power shall be installed in any dam herein authorized when approved by the Secretary of War upon the recommendation of the Chief of Engineers and of the Federal Power Commission.

"The Denison Reservoir on Red River in Texas and Oklahoma for flood control and other purposes as described in House Document Numbered 541, Seventy-fifth Congress, third session, with such modifications thereof as in the discretion of the Secretary of War and the Chief of Engineers may be advisable, is adopted and authorized at an estimated cost of \$54,000,000.

"The Government of the United States acknowledges the right of the States of Oklahoma and Texas to continue to exercise all existing proprietary or other rights of supervision of and jurisdiction over the waters of all tributaries of Red River within their borders above Denison Dam site and above said dam, if and when constructed, in the same manner and to the same extent as is now or may hereafter be provided by the laws of said States, respectively, and all

domain of Oklahoma which would impound the waters of the Red River (or its tributary, Washita River) so as to inundate and destroy any of the lands, highways or bridges belonging to or under the jurisdiction and control of the state or which would obliterate or interfere with its boundaries. The bill also seeks to restrain the institution or conduct in any court in Oklahoma of proceedings to condemn lands for the purpose of the dam or reservoir.²

The bill alleges that Oklahoma will be injured in the following manner by construction of the project: The greater part of the dam will rest on Oklahoma soil and will form a reservoir inundating about 150,000 acres of land, of which 100,000 acres are located in Oklahoma. Of those acres about 3800 are owned by the state. The United States will acquire title to the inundated land. The land owned by the state is used for school purposes, for a prison farm, for highways, rights of way, and bridges. The basin to be inundated is inhabited by about 8,000 Oklahoma citizens. Much of the land is rich soil in a high state of cultivation. Much of it has large potential oil reserves. On some of it there are large producing oil wells and on other parts there are drilling operations and exploration for oil and gas. At least 15,000 acres will be highly productive oil lands and at least 50,000 acres are underlaid with oil and gas. There are thirty-nine school districts and townships in the four counties in which the affected area is located. Those governmental units are largely supported by *ad valorem* taxes. The taking of the 100,000 acres will decrease the taxable property in each of the counties and take virtually

of said laws as they now exist or as same may be hereafter amended or enacted and all rights thereunder, including the rights to impound or authorize the retardation or impounding thereof for flood control above the said Denison Dam and to divert the same for municipal purposes, domestic uses, and for irrigation, power generation, and other beneficial uses, shall be and remain unaffected by or as a result hereof. All such rights are hereby saved and reserved for and to the said States and the people and the municipalities thereof, and the impounding of any such waters for any and all beneficial uses by said States or under their authority may be as freely done after the passage hereof as the same may now be done."

In October, 1939, the State of Oklahoma filed with this Court a motion for leave to file a bill of complaint seeking an injunction against the then Secretary of War from proceeding with the construction of this project. The motion for leave to file was denied by an equally divided court. *Oklahoma v. Woodring*, 309 U. S. 623.

² Appellees are Guy F. Atkinson Co., alleged to be constructing the dam under a contract with the War Department; and Cleon A. Summers and Curtis P. Harris, who as attorneys for the government are alleged to have instituted numerous condemnation suits for the purposes of the proposed reservoir.

all of the taxable property in many of the townships and school districts. Each of these governmental units has a large bonded indebtedness payable from an annual levy of taxes. Inundation of the land will deprive those units of much of the tax revenue, so that many will be practically destroyed and the remainder seriously hampered. Since the state derives much of its revenue from a gross production tax on oil and gas, it will suffer great losses in tax revenues from the inundation of the oil and gas lands. The "annual wealth production" to the citizens of Oklahoma from the lands in the reservoir basin is about \$1,500,000. Aside from such losses and losses from oil revenues and personal property taxation, the net taxable loss to the counties, townships and school districts will be about \$40,000 annually.

It is also alleged that the construction of the dam will be a "direct invasion and destruction" of the sovereign and proprietary rights of Oklahoma in that: the boundary of Oklahoma will be obliterated for approximately 40 miles (see *Oklahoma v. Texas*, 260 U. S. 606); there will be a "forcible reduction of the area of plaintiff as one of the United States"; lands owned by it will be taken; its highways and bridges will be destroyed causing an interruption in communication between various parts of the state; the waters to be impounded belong to Oklahoma but will be taken from it without payment of just compensation; those waters will be diverted from Oklahoma and will be run through turbines located in Texas for the generation of power for sale principally in Texas; the removal of citizens from the 100,000 acres of land will create a "serious social and economic problem", the burden of which will fall on Oklahoma for which no compensation is afforded.

The bill incorporates H. Doc. No. 541, 75th Cong., 3d Sess. (hereinafter called the Report) which contains the War Department's survey and recommendations on the Denison Reservoir and which served as the broad definition of the project which was authorized by the Act of June 28, 1938. The bill alleges that under the statutory scheme flood control and power purposes are "inextricably and inseparably involved". It alleges that, as described in the Report, the first 110 feet of the dam are to be used "solely and exclusively for the development of waterpower", while 40 feet "superimposed" on the power reservoir are to be used "solely and exclusively" for flood control. That is to say, from elevation 510

feet (sea level) to 590 feet there is to be a dead storage pool for waterpower head, from 595 feet to 620 feet there is to be a water power reservoir, and from 620 feet to 660 feet there is to be a flood control reservoir. It is alleged that those purposes are "functionally separate and neither is the incidental or necessary result of the other"; that the same part of the reservoir will not and cannot be used for both flood control and waterpower purposes; and that the power portion of the dam is created at the expense of its utilization for flood control. The bill further alleges that as a result of the modification of the statutory plan set forth in the Report the dam is being constructed so as to provide dead storage for water head from 510 feet to 567 feet, a power pool reservoir from 587 feet to 617 feet and a flood control reservoir from 617 feet to 640 feet. It is alleged that by reason of that modification the reservoir will inundate 3,080,000 acre feet for power and 2,745,000 acre feet for flood control as contrasted to 3,400,000 acre feet for power and 5,900,000 acre feet for flood control under the original plan;³ and that, as a result, the statutory scheme has been changed from one preponderantly for flood control to one preponderantly for water power. It is also alleged that no part of the Red River in Oklahoma is navigable.

³ In this connection it is alleged that under the statutory scheme 75% of the height of the dam is for power and 25% for flood control, and 37% of the acre-feet inundated is for water storage for power and 63% for flood control, while under the modified plan 82% of the height of the dam is for power and 18% for flood control, and 53% of the acre-feet inundated is for water storage for power and 47% for flood control.

The original plan or statutory scheme as set forth in the Report (H. Doc. No. 541, 75th Cong., 3d Sess., p. 45) was described therein as follows:

"The project plan as designed for the combined flood control and power-development scheme with top of dam at elevation 695 is based upon the following allocation of reservoir capacity, the volumes being given in round figures.

"(a) Dead storage.—Stream bed elevation 505 to lower power pool elevation 595, 1,400,000 acre-feet.

"(b) Power pool storage.—Elevation 595 to elevation 620, 2,000,000 acre-feet.

"(c) Flood pool storage.—Elevation 620 to crest of spillway, elevation 660, 5,900,000 acre-feet.

"(d) Detention flood storage.—Storage above the spillway crest, elevation 660, to the maximum reservoir surface reached by the impounded floodwaters, which in the case of the project flood would be 6,400,000 acre-feet for elevation 687."

Under § 4 of the Act of June 28, 1938, the Secretary of War and the Chief of Engineers were authorized to modify the project as it was described in the Report. A modification has been made. Definite Project for Denison Dam &

The bill alleges that the Act under which appellees are proceeding is unconstitutional in that it violates the Tenth Amendment, that it is not within the powers of Congress conferred by Art. I, Sec. 8 of the Federal Constitution, and that since appellees are acting under a void and unconstitutional statute they should be enjoined. By an amendment to its bill, the state of Oklahoma also challenges the constitutionality of § 4 of the Act of October 17, 1940⁴ (Pub. No. 868, c. 895, 76th Cong., 3d Sess.). The amended bill alleges that the project "does not in any way protect or improve the navigable portions of the lower reaches of Red river or of the Mississippi river either by enriching the low water flow . . . as the incidental result of the operation of said flood control and hydroelectric power project, except in the intangible, indirect, inconsequential and unsubstantial way" set forth in the Report; and that such inconsequential and intangible benefits to navigation as may result will flow from the flood control, not the power feature, of the project.

By motions to dismiss the appellees asserted, *inter alia*, that the Acts of Congress so challenged were constitutional and valid. The case was heard by a three judge court (Act of August 24, 1937, c. 754, § 3, 50 Stat. 751, 28 U. S. C. § 380a) which sustained the Act authorizing the project. 37 F. Supp. 93. From a judgment dismissing the complaint and denying the injunction, a direct appeal was taken to this Court.

We are of the view that the Denison Dam and Reservoir project is a valid exercise of the commerce power by Congress.

Reservoir, Red River, Corps of Engineers, U. S. Army (not printed). Those changes were reported to a committee of Congress. Hearings, S. Subcom. on Appropriations, H. R. 6260, 76th Cong., 1st Sess., pp. 25-26, 301. Under the Definite Project (pp. 10-14) the following allocation of reservoir capacity has been made:

(a) *Dead Storage*. Stream bed elevation 505 to lower power pool elevation 587, 1,020,000 acre feet.

(b) *Power pool storage*. Elevation 587 to elevation 617, 2,060,000 acre feet.

(c) *Flood pool storage*. Elevation 617 to spillway crest, elevation 640, 2,745,000 acre feet.

(d) *Detention flood storage*. Elevation spillway crest, 640, to crest of dam, 670. Appellees on the basis of Definite Project, Appendix A, Plate A-23, place the acre feet at approximately 3,300,000 for elevation 662—the condition which, it is asserted, will exist in case of the maximum probable flood.

⁴ That section provides: "The project for the Denison Reservoir on Red River in Texas and Oklahoma, authorized by the Flood Control Act approved June 28, 1938, is hereby declared to be for the purpose of improving navigation, regulating the flow of the Red River, controlling floods, and for other beneficial uses."

This project is a part of a rather recent chapter in the long history of flood control on the Mississippi River.⁵ The federal government had concerned itself with the problems of navigation and flood control on that river long before⁶ the establishment of the Mississippi River Commission (21 Stat. 37) in 1879. Earlier efforts towards a more comprehensive flood control program on a national scale⁷ were accelerated by the disastrous Mississippi flood in 1927. The agitation and concern over that disaster⁸ led to the enactment of the Flood Control Act of May 15, 1928 (45 Stat. 534), § 10 of which provided that the Secretary of War should submit to Congress "at the earliest practicable date projects for flood control on all tributary streams of the Mississippi River system subject to destructive floods which projects shall include: The Red River and tributaries"

That section of the Act also required a report on the effect on flood control of the lower Mississippi to be attained through the use of a reservoir system, the "benefits that will accrue to navigation and agriculture" from the prevention of siltage and erosion, the "prospective income from the disposal of reservoired waters", and, "inquiry as to the return flow of waters placed in the soils from reservoirs, and as to their stabilizing effect on stream flow as a means of preventing erosion, siltage, and improving navigation." Pursuant to that authorization and direction a report (H. Doc. No. 378, 74th Cong., 2d Sess.) was submitted on December 2, 1935, dealing at

⁵ For a summary of various flood control projects on the lower Mississippi, see Report of the Mississippi Valley Committee of the Public Works Administration (1934), pp. 207 *et seq.*; Elliott, *The Improvement of the Lower Mississippi River for Flood Control & Navigation* (1932), pp. 1-21; Frank, *The Development of the Federal Program of Flood Control on the Mississippi River* (1930); Beman, *Flood Control* (1928).

And see H. Doc. No. 541, 75th Cong., 3d Sess., p. 3; Fly, *The Role of the Federal Government in the Conservation and Utilization of Water Resources*, 86 U. Pa. L. Rev. 274; Kerwin, *Federal Water-Power Legislation* (1926).

For bibliography, see H. Com. Doc. No. 4, 70th Cong., 1st Sess.

⁶ See Elliott, *op. cit.*, pp. 1-21; S. Ex. Doc. No. 20, 32d Cong., 1st Sess.; S. Ex. Doc. No. 8, 40th Cong., 1st Sess.; H. Ex. Doc. No. 127, 43 Cong., 2d Sess. For the history and work of the Mississippi River Commission, see H. Rep. No. 1072, 70th Cong., 1st Sess., pp. 334-354.

⁷ See, for example, the so-called First Flood Control Act of March 1, 1917, c. 144, 39 Stat. 948.

⁸ H. Rep. No. 1072, 70th Cong., 1st Sess.; H. Doc. No. 90, 70th Cong., 1st Sess.; Hearings, H. Comm. on Flood Control, 70th Cong., 1st Sess., on *The Mississippi River and its Tributaries*; Hearings, S. Comm. on Commerce, 70th Cong., 1st Sess., on *Flood Control of the Mississippi River*.

And see Hoover, *The Improvement of our Mid-West Waterways*, 135 Annals, No. 224, p. 15.

great length with the problems of the Red River and its tributaries and their relationship with the Mississippi.

On June 22, 1936, there was enacted⁹ the Flood Control Act of 1936 (49 Stat. 1570). Sec. 1 of that Act set forth a broad Congressional policy, stating, *inter alia*, that "the Federal Government should improve or participate in the improvement of navigable waters or their tributaries, including watersheds thereof, for flood-control purposes if the benefits to whomsoever they may accrue are in excess of the estimated costs, and if the lives and social security of people are otherwise adversely affected" and that "destructive floods upon the rivers of the United States, upsetting orderly processes and causing loss of life and property, including the erosion of lands, and impairing and obstructing navigation, highways, railroads, and other channels of commerce between the States, constitute a menace to national welfare." That Act authorized the construction of various flood control projects. By § 7 of that Act the Secretary of War was authorized and directed to continue the investigation of other projects, including the Denison Reservoir, where "opportunities appear to exist for useful flood-control operations with economical development of hydroelectric power whenever sufficient markets to absorb such power become available."

Following the disastrous Ohio River flood in January, 1937, the House Committee on Flood Control requested¹⁰ the Chief of Engineers to submit "comprehensive plans for protective works against floods in the Ohio Valley" and plans "to further insure protection in the Mississippi Valley". He submitted a report pursuant to that direction and recommended the construction of 45 flood-control reservoirs on the tributaries of the Ohio and 24 on other tributaries of the Mississippi, including the Red River.¹¹ As to the proposed Denison Reservoir he stated that it "would remove the threat of the coincidence of a large flood from the Red with a flood in the

⁹ See Hearings, S. Subcom. on Commerce, 74th Cong., 2d Sess., on S. 3531; Hearings, H. Comm. on Flood Control, 74th Cong., 2d Sess., on S. 3531; Hearings, S. Comm. on Commerce, Ex. Sess. 74th Cong., 2d Sess., on H. R. 8455; S. Rep. No. 1963, 74th Cong., 2d Sess.; H. Rep. No. 2918, 74th Cong., 2d Sess.; H. Rep. No. 2583, 74th Cong., 2d Sess.; S. Rep. No. 1662, 74th Cong., 2d Sess.

¹⁰ The resolution is set forth in Com. Doc. No. 1, H. Comm. on Flood Control, 75th Cong., 1st Sess., p. 1.

¹¹ Com. Doc. No. 1, op. cit., p. 11.

Mississippi, and would also afford highly desirable protection to the fertile bottom lands in the lower Red River Valley. Besides its flood-control benefits, it has valuable potentiality for power purposes."¹² And he added: "On the Red River . . . investigations indicate that a flood far exceeding any of record is distinctly possible. The Denison Reservoir would prevent such a flood from reaching disastrous proportions in the valley below it."¹³

On March 12, 1938, the Acting Secretary of War transmitted to Congress a report from the Chief of Engineers, United States Army, pursuant to the direction contained in § 7 of the Flood Control Act of 1936. That Report, being the one here involved, (H. Doc. No. 541, 75th Cong., 3d Sess.) recommended the construction of a dam near Denison, Texas, for the combined purpose of flood control and development of hydroelectric power. After hearings¹⁴ Congress passed the Flood Control Act of 1938, here challenged, which authorized,¹⁵ *inter alia*, the Denison project on the basis of the Report and at an estimated cost of \$54,000,000. This was followed by appropriations for the construction work¹⁶ and by the Act of October 17, 1940, also challenged by appellant, declaring the Denison Reservoir to be "for the purpose of improving navigation, regulating the flow of the Red River, controlling floods, and for other beneficial uses."¹⁷ Thus, while the Report spoke of the dam as a "dual purpose" project, Congress did not so limit it but authorized it for multiple purposes.

From this history it is plain that this project, which is part of a comprehensive flood control plan, is designed to control the watershed of one of the principal tributaries of the Mississippi in alleviation of floods in the lower Red River and Mississippi valleys. The

¹² Com. Doc. No. 1, *op. cit.*, pp. 7-8.

¹³ Com. Doc. No. 1, *op. cit.*, p. 8. The Chief of Engineers, United States Army, on February 12, 1935, had submitted a special report to the House Committee on Flood Control, entitled Flood-Control Works in the Alluvial Valley of the Mississippi River, Com. Doc. No. 1, 74th Cong., 1st Sess. And see the Message by President Roosevelt to Congress June 3, 1937, 81 Cong. Rec., pt. 5, 75th Cong., 1st Sess., p. 5280.

¹⁴ Hearings, House Comm. on Flood Control on H. R. 10618, 75th Cong., 3d Sess., pp. 605-686.

¹⁵ Sec. 4 of that Act is set forth in part in note 1, *supra*.

¹⁶ Act of June 28, 1939, c. 246, 53 Stat. 856; Act of June 24, 1940, Pub. No. 653, c. 415, 76th Cong., 3d Sess. See H. Rep. No. 604, 76th Cong., 1st Sess., p. 4; Hearings, S. Subcom. on Appropriations on H. R. 6260, 76th Cong., 1st Sess., p. 13.

¹⁷ See note 4, *supra*.

Red River, sixth in length among rivers in the United States, has one of the largest watersheds in the country, draining an area about 50 per cent larger than New England—an area of 91,430 square miles, of which 38,291 square miles are above the dam site.¹⁸ It rises near the east edge of New Mexico, flows easterly about 850 miles across the Texas Panhandle and between the states of Oklahoma and Texas to Fulton, Arkansas. From there it flows south and southeast some 460 miles and enters the Mississippi at Red River Landing. The site of the Denison dam is 228 miles up the river from Fulton. The contribution which the Red River makes to disastrous floods in its basin and in the lower Mississippi has long been recognized. Huge crop damage, the loss of buildings, bridges and livestock, pollution of fertile fields, the erosion of rich farm lands, bank cavings, interruption of navigation, injury of port facilities, the creation of sand bars in the channels, interruption or stoppage of interstate transportation by rail, truck and motorear, disease, pestilence and death, relief of the homeless and destitute—all these are now familiar costs of the floods on the Mississippi.¹⁹ And the history of the Red River valley shows that it has long been plagued by such disasters and burdened by their costs.²⁰

¹⁸ Report, p. 17.

¹⁹ As respects the January, 1937 Ohio River flood, the Chief of Engineers reported in April, 1937: "The river rose to a height of 80 feet above low water at Cincinnati, being nearly 9 feet above any flood heretofore of record. The resulting damage was enormous. Practically every community along the entire river suffered heavy loss. Water, electricity, and gas services were discontinued in many cities. More than 500,000 persons were driven from their homes and suffered great discomfort and distress. Highway and railway communications were severed and business and industrial activities were completely disrupted for several weeks. Relief agencies were taxed to the utmost to provide for the flood refugees. Although the direct damages have not yet been fully ascertained, they may conservatively be estimated at more than \$400,000,000. The War Department expended more than \$5,000,000 in relief work and in providing supplies and materials for the flood areas, and approximately \$5,000,000 for emergency work to protect existing structures. The Works Progress Administration provided labor and services. The relief activities of the American Red Cross aggregated more than \$7,500,000. The expenditures of the Federal Government and of the Red Cross for rehabilitation will add greatly to the expenditures already made." Com. Doc. No. 1, H. Comm. on Flood Control, 75th Cong., 1st Sess., p. 3. And see H. Doc. No. 90, 70th Cong., 1st Sess., p. 2; H. Rep. No. 1072, 70th Cong., 1st Sess.; H. Doc. No. 455, 76th Cong., 1st Sess.; H. Doc. No. 91, 76th Cong., 1st Sess.; H. Rep. No. 616, 64th Cong., 1st Sess.; Thomas, *Hungry Waters* (1937).

²⁰ See H. Doc. No. 378, 74th Cong., 2d Sess., pp. 372 *et seq.*; Report, pp. 29; 70-71, 84-87, 88, 94.

Floods pay no respect to state lines.²¹ Their effective control in the Mississippi valley has become increasingly a subject of national concern²² in recognition of the fact that single states are impotent to cope with them effectively. The methods of dealing with them have elicited a contrariety of views.²³

The idea of reservoir control on the tributaries of the Mississippi is not new. The Eket report²⁴ to the War Department in 1852 urged the making of surveys for the installation of reservoirs on the Red River and other tributaries which would serve the "double purpose" of "keeping back the floods" and relieving "summer navigation from obstruction, by allowing the surplus so retained, to pass down in the season of low water."²⁵ The emergence in recent years of comprehensive plans for reservoirs in the Mississippi river basin²⁶ marks the development of an integrated system designed not only to alleviate ultimately flood conditions on the Mississippi itself but also to avoid or reduce local flood disasters. A part of the local benefits of flood control is frequently protection of navigation in the tributary itself. That is present here to a degree. It is true that "no part of the [Red] river within Oklahoma is navigable." *Oklahoma v. Texas*, 258 U. S. 574, 591.

²¹ The flood protection afforded by Denison Reservoir will accrue to four states: two-fifths to Louisiana, and one-fifth each to Oklahoma, Texas, and Arkansas. Report, p. 11. And see Report of the Mississippi Valley Committee of the Public Works Administration (1934).

²² National Resources Board, Report 1934, pp. 26-30, 325-329; National Resources Committee, Drainage Basin Problems and Programs (1936), pp. 73-77; H. Doc. No. 306, Onit River, 74th Cong., 1st Sess.; S. Rep. No. 891, 64th Cong., 2d Sess.

On forest and flood relationships in the Mississippi river watershed, see H. Doc. No. 573, 70th Cong., 2d Sess., pp. 5, *et seq.* S. Doc. No. 12, 73d Cong., 1st Sess., pp. 299 *et seq.*; pp. 1509 *et seq.*

²³ H. Rep. No. 1072, 70th Cong., 1st Sess., pp. 5-16. And see *United States v. Sponenbarger*, 308 U. S. 256; H. Doc. No. 90, 70th Cong., 1st Sess.; S. Doc. No. 1094, 62d Cong., 3d Sess.; S. Rep. No. 1662, 74th Cong., 2d Sess.; H. Rep. No. 2583, 74th Cong., 2d Sess.

²⁴ S. Ex. Doc. No. 20, 32d Cong., 1st Sess., pp. 13, 99, *et seq.* And see the review of the ideas for reservoirs contained in Final Report, National Waterways Commission, S. Doc. No. 469, 62d Cong., 2d Sess., App. II; National Waterways Comm., Doc. No. 14, Jan. 1910; H. Doc. No. 1289, 62d Cong., 3d Sess.

²⁵ S. Ex. Doc. No. 20, 32d Cong., 1st Sess., p. 102.

²⁶ See H. Doc. No. 259, 74th Cong., 1st Sess.; Nat. Res. Com., Drainage Basin Problems and Programs (1938); H. Doc. No. 798, 71st Cong., 3d Sess., Vol. 2; H. Rep. No. 1072, 70th Cong., 1st Sess., pp. 101-109; H. Doc. No. 395, 73d Cong., 2d Sess., Pt. 5; H. Rep. No. 1100, 70th Cong., 1st Sess., p. 14; H. Rep. No. 1120, 75th Cong., 1st Sess.

Though appellant alleged that the stream is not now a navigable river of the United States, it has heretofore been authoritatively determined that in years past "the usual head of navigation" was Lanesport, Arkansas, near the Oklahoma boundary. *Id.*, p. 589. At the present time commerce on the Red River is limited to the section below Alexandria, Louisiana, 122 miles above its mouth.²⁷ The fact that portions of a river are no longer used for commerce does not dilute the power of Congress over them. *Economy Light & Power Co. v. United States*, 256 U. S. 113, 123; *United States v. Appalachian Power Co.*, 311 U. S. 377, 409-410. And it is clear that Congress may exercise its control over the non-navigable stretches of a river in order to preserve or promote commerce on the navigable portions. *United States v. Rio Grande Dam & Irrigation Co.*, 174 U. S. 690, 703, 706, 708; *United States v. Utah*, 283 U. S. 64, 90. It is obvious that at least incidentally Congress has done precisely that in this case. Congress was not unmindful of the effect of this project on the navigable capacity of the river. In authorizing it, Congress exercised all the power it possessed to control navigable waters. The Acts in question contain a declaration that one of their purposes is to improve navigation. And the Report clearly shows that the Denison Reservoir will have at least an incidental effect in protecting or improving the navigability of portions of the Red River. The District Engineer reported that "Inasmuch as any new navigation system for the Red River would require flow regulation to furnish a dependable navigable improvement, the Denison Reservoir would be of considerable benefit."²⁸ In his view it would decrease bank caving and silt carriage, substitute "moderately high stages of long durations for high-flood stages of short duration", "furnish more dependable navigable stages especially in the upper portions of the navigation pools",²⁹ and have a "favorable effect on open-channel navigation by reducing flood stages and increasing low-water flows."³⁰ The Division Engineer expressed the view that a "dependable low-water flow of 2,200 to 3,000 cubic feet per second which would result from construction and operation of the power

²⁷ Report, pp. 2-3; and see p. 65.

²⁸ Report, p. 67. And see p. 72.

²⁹ *Id.*, p. 67.

³⁰ *Id.*, p. 68.

project at Denison would be of distinct benefit to the small commerce now developed upon those reaches of the lower Red River which are included in approved navigation projects, and might have a material bearing upon future studies of the Red River with a view to its further improvement. In the present state of knowledge upon this point, it is necessary to classify these benefits among the intangibles. But there is no doubt that a dependable low water supply would simplify, perhaps materially, such future development of the river as may be undertaken.³¹ Thus the effect on the river is tangible, though the value may be uncertain³² since it depends in part on future action of Congress. But that is not our concern.

We would, however, be less than frank if we failed to recognize this project as part of a comprehensive flood control program for the Mississippi itself. But there is no constitutional reason why Congress or the courts should be blind to the engineering prospects of protecting the nation's arteries of commerce through control of the watersheds. There is no constitutional reason why Congress cannot under the commerce power treat the watersheds as a key to flood control on navigable streams and their tributaries. Nor is there a constitutional necessity for viewing each reservoir project in isolation from a comprehensive plan covering the entire basin of a particular river. We need no survey to know that the Mississippi is a navigable river. We need no survey to know that the tributaries are generous contributors to the floods of the Mississippi. And it is common knowledge that Mississippi floods have paralyzed commerce³³ in the affected areas and have im-

³¹ Report, pp. 79-80. The initial project for improvement of navigation on the Red River was authorized in 1828. Federal expenditures to June 30, 1936, exceeded \$4,000,000. *Id.*, p. 3.

³² As to the intangible benefits from flood control see H. Doc. No. 455, 76th Cong., 1st Sess., entitled *Value of Flood Height Reduction from Tennessee Valley Authority Reservoirs to the Alluvial Valley of the Lower Mississippi River*; H. Doc. No. 91, 76th Cong., 1st Sess., pp. 22 *et seq.*, entitled *The Chattanooga Flood Control Problem*; Cooke, *On the Relations of Engineering Science to Flood Control*, 84 *Science* (Supp.) 40.

³³ As respects benefits from flood height reduction to railroads and highways, see H. Doc. No. 455, 76th Cong., 1st Sess., pp. 21-27; Report, App. H. (not printed) §§ 8-10, 16; H. Doc. No. 378, 74th Cong., 2d Sess., pp. 35-36, 264-265, 372-373; H. Rep. No. 1072, 70th Cong., 1st Sess., pp. 224-228, 246-248; Hearings, S. Comm. on Commerce, Ex. Sess., 74th Cong., 2d Sess., on H. R. 8455, pp. 71-72, 307. For a full account of flood damage to railroads see: Bull., Amer. Ry. Eng. Ass'n (1928) Vol. 29, No. 303, pt. 2.

paired navigation itself. We have recently recognized that "Flood protection, watershed development, recovery of the cost of improvements through utilization of power are . . . parts of commerce control." *United States v. Appalachian Power Co.*, *supra*, p. 426. And we now add that the power of flood control extends to the tributaries of navigable streams. For just as control over the non-navigable parts of a river may be essential or desirable in the interests of the navigable portions, so may the key to flood control on a navigable stream be found in whole or in part in flood control on its tributaries. As repeatedly recognized by this Court from *M'Culloch v. Maryland*, 4 Wheat. 316, to *United States v. Darby*, 312 U. S. 100, the exercise of the granted power of Congress to regulate interstate commerce may be aided by appropriate and needful control of activities and agencies which, though intra-state, affect that commerce.

It is, of course, true that the extent to which this project will alleviate flood conditions in the lower Mississippi is somewhat conjectural. The District Engineer estimated that the Denison project would cause a reduction of 35,000 cubic feet per second in the lower Mississippi in case the May, 1908 flood were repeated; 8,000 cubic feet per second, in case of the May, 1935 flood; and 100,000 cubic feet per second, in case of the estimated maximum probable flood.³⁴ But the Division Engineer pointed out that "the magnitude of the effect would depend upon the size and origin of the concurrent flood in Red River, and upon the basis of reservoir operation."³⁵ In his view, a reduction in flow of 35,000 cubic feet per second in case of such a flood as 1908 "if long enough sustained, would imply a reduction in stage averaging 1.3 feet between Alexandria and Moncla, and a reduction of 0.15 foot in the flow lines of the Atchafalaya Basin and the main river below Old River, provided they were at peak stage. At lower stages the effect would be greater, but less necessary."³⁶ This matter was again reviewed in the Definite Project and the following observations were made:³⁷ "Floods in the

³⁴ Report, p. 74. Cf. H. Doc. No. 798, 71st Cong., 3d Sess., Vol. 2, Annex 18, pp. 1496-1498.

³⁵ Report, p. 86.

³⁶ *Id.*, p. 8.

³⁷ Definite Project, App. D., p. 7. As respects the relation of the Mississippi River as a commerce carrier to flood control, see H. Rep. No. 1072, 70th Cong., 1st Sess., p. 359.

Mississippi River usually occur in the spring as a result of flood flows out of the Ohio River. The coincidence of flood flows out of the Red River with the Mississippi River spring floods is rare. However, the early summer floods out of the Missouri River occasionally coincide in the Mississippi River with the summer floods out of the Red River. The control provided by the proposed Denison Dam and Reservoir on the Red River summer floods has been estimated to produce a reduction of approximately 0.6 foot at the mouth of Old River on the Mississippi. This reduction, while not substantial with respect to Mississippi flood stages is important when flood crests seriously tax the Mississippi levee system."

Such matters raise not constitutional issues but questions of policy. They relate to the wisdom, need, and effectiveness of a particular project. They are therefore questions for the Congress not the courts. For us to inquire whether this reservoir will effect a substantial reduction in the lower Mississippi floods would be to exercise a legislative judgment based on a complexity of engineering data. It is for Congress alone to decide whether a particular project, by itself or as part of a more comprehensive scheme, will have such a beneficial effect on the arteries of interstate commerce as to warrant it. That determination is legislative in character. *Cf. United States v. Appalachian Power Co., supra*, p. 424. The nature of the judgment involved is reemphasized if this project is viewed not in isolation but as part of a comprehensive, integrated reservoir system in the Mississippi River basin. A War Department survey in 1935 reveals promising engineering prospects in a system of 157 reservoirs²⁸ throughout the tributaries of the Mississippi. To say that no one of those projects could be constitutionally authorized because its separate effect on floods in the Mississippi would be too conjectural would be to deny the actual or potential aggregate benefits of the integrated system as a whole. That reveals the necessity from the constitutional viewpoint of leaving to Congress the decision as to what watersheds should be controlled (and what methods should be employed) in order to protect the various arteries of interstate commerce from the disasters of floods.

Nor is it for us to determine whether the resulting benefits to commerce as a result of this particular exercise by Congress of the

²⁸ H. Doc. No. 259, 74th Cong., 1st Sess.

commerce power outweigh the costs of the undertaking. *Arizona v. California*, 283 U. S. 423, 456-457; *Ashwander v. Tennessee Valley Authority*, 297 U. S. 288, 329-330. Nor may we inquire into the motives of members of Congress who voted for this project in an endeavor to ascertain whether their concern over the great national loss from soil erosion, the enormous crop damages, the destruction of homes, the loss of life and other like ravages of floods overshadowed in their minds the desirability of protecting the Mississippi and other arteries of commerce. *Arizona v. California*, *supra*, p. 455, and cases cited. It is sufficient for us that Congress has exercised its commerce power, though other purposes will also be served. *Id.*, p. 456.

But Oklahoma points out that the Denison Reservoir is a multiple purpose project,³⁹ combining functionally and physically separate and unrelated purposes. It says that only the top 40 feet of the dam is set apart for flood control and that the lower portions of the dam are designed for the power project and are neither useful or necessary for flood control. It points out from the Report⁴⁰ that a reservoir for flood control only would have a maximum height of 165 feet while a reservoir for flood control and power development would require a maximum height of 185 feet. It therefore earnestly contends that the additional 20 feet in height of the dam requires a very much greater acreage of appellant's domain than would a project for flood control only. And it insists that Congress is without authority to authorize a taking of Oklahoma's domain for the construction of the water power feature of the project.

There are several answers to these contentions. We are not concerned here with the question as to the authority of the federal government to establish on a non-navigable stream a power project which has no relation to, or is not a part of, a flood control project. While this reservoir is a multiple purpose project, it is basically one for flood control. There is no indication that but for flood control it would have been projected. It originated as part of a comprehensive

³⁹ On functional aspects of multiple-purpose dams, see note 45, *infra*.

⁴⁰ P. 42. In this connection, it should be noted that the District Engineer recommended that a dam for flood control only would be at elevation 675, while the multiple purpose dam would be at elevation 695. Report, p. 42. The Division Engineer, however, stated that a restudy indicated "that in the case of the flood-control-only project greater economy would result from narrowing the spillway to 1500 feet and raising the crest of the dam to elevation 691 feet." *Id.*, p. 80.

program for flood control. And the recommendation in the Report that a dual purpose dam be constructed was based "on the assumption that the flood-control project is to be built in any event."⁴¹ See *United States v. Chandler-Dunbar Co.*, 229 U. S. 53, 73. Furthermore, it is plain from the Report that the construction of the project so as to accommodate power will increase or augment some of the flood control benefits, including river flow, which would accrue were the dam to be erected for flood control only. Thus, the District Engineer stated: "If it were constructed solely for flood control it would have beneficial effects in reducing floods, decreasing bank caving and silt carriage, and in substituting moderately high stages of long durations for high-flood stages of short duration. If the Denison Reservoir were constructed for the dual purposes of flood control and power development, these beneficent effects would be augmented by those resulting from the regulated power discharge which would increase low-water flows and furnish more dependable navigable stages especially in the upper portions of the navigation pools."⁴²

It is true that the power phase of this project in purpose and effect will carry some of the costs of flood control. The Division Engineer estimated that the annual deficit of \$287,000 from flood control would be offset by an annual profit of \$404,310 from power, leaving an annual net profit of \$117,000.⁴³ But the fact that Congress has introduced power development into this project as a paying partner⁴⁴ does not derogate from the authority of Congress

⁴¹ P. 94.

⁴² Report, p. 67.

⁴³ *Id.*, p. 94.

⁴⁴ As stated in Report of the Mississippi Valley Committee of the Public Works Administration (1934), p. 23:

"Navigation is particularly benefited by reduction of flood crests, and all of the possibilities of water use are improved by increases in flow at extreme low stages. Under certain favorable circumstances it may be possible to release water from flood control reservoirs to satisfy requirements for hydroelectric power development at the dam, or to regulate the flow down stream to the advantage of a variety of water uses. In such cases equitable distribution of costs among the several purposes served may even sufficiently reduce the costs chargeable to flood protection to warrant the construction of flood-control reservoirs which could not be justified for flood protection alone."

And see *Fly*; *The Role of the Federal Government in the Conservation and Utilization of Water Resources*, 36 U. Pa. L. Rev. 274, 286 *et seq.*; Message by President Taft, August 24, 1912, 48 Cong. Rec., pt. 11, 62d Cong., 2d Sess., p. 11796; vetoing a bill authorizing the building of a dam across Coosa River, Alabama, by a private company; S. Doc. No. 246, 64th Cong., 1st Sess.

to construct the dam for flood control, including river flow. The power project is not unrelated to those purposes.⁴⁵ The allocations of cost⁴⁶ and storage between power and flood control, however significant for some purposes, cannot conceal the flood control realities of this total project. Cost of the power project, roughly speaking, was determined by the cost of the multiple purpose dam less the cost of a dam for flood control only.⁴⁷ On that basis the Report points out that the cost of storage for flood control only (5,800,000 acre-feet) is about \$6.60 per acre-foot, while the cost of the 3,500,000 acre-feet in the so-called power pool is around \$2 per acre-foot, exclusive of the cost of the powerhouse and appurtenant construction.⁴⁸ In this connection, the Definite Project states that the "amount of storage which can be economically allocated to the production of power depends on the ability of the power market to absorb the power during the useful life of the project."⁴⁹ But the Division Engineer observed that "In actual operation of the dual-purpose project this cheap storage would be dedicated to flood control, whereas in the financial set-up it is credited to power."⁵⁰ It is clear from the Report⁵¹

⁴⁵ On the relationships between the multiple purposes of water control see Report of the Mississippi Valley Committee of the Public Works Administration (1934), pp. 20-24; Alvord & Burdick, *Relief from Floods* (1918), pp. 28-36; Clemens, *The Reservoir as a Flood-Control Structure* (1935), 100 Am. Soc. of Civ. Engs. 879; H. Doc. No. 1792, 64th Cong., 2d Sess., p. 5.

⁴⁶ And see Nat. Res. Com., *Water Planning* (1938); Nat. Res. Com., *Energy Resources & National Policy* (1939), p. 306.

⁴⁷ Cf. Hamilton, *Cost as a Standard for Price*, 4 Law & Cont. Problems (1937), 321, 325.

⁴⁸ Report, pp. 60, 64.

⁴⁹ Report, p. 82.

⁵⁰ Definite Project, p. 11. The District Engineer stated in the Report, p. 32: "A hydroelectric development alone at the Denison Reservoir site could not absorb all of the reservoir costs and produce power in competition with that from fuel-consuming plants. However, the combination of flood control and power development in the Denison Reservoir presents certain promise of favorable economic feasibility. Although this reservoir would approach economic justification if constructed exclusively for flood control, the income from power developed in conjunction with flood control would in part absorb this deficiency since the value of the available power would be somewhat in excess of its cost. It is apparent that the relative amounts of annual return, flood benefits, or power revenues, from each of the two functions of a dual-purpose development are quantitatively dependent upon the manner in which storage potentialities of the site are apportioned between these two functions. It is believed, however, that an increased allocation of such storage to flood control at the expense of power would not materially alter the above conclusion except perhaps to show economic deficiencies for both phases of the development."

⁵¹ Report, p. 82.

⁵² *Id.*, pp. 45-46.

and the Definite Project that the bottom pool of dead storage is designed to take care of the deposit of silt "which would otherwise reduce the efficiency and economic worth of the flood control storage."⁵² At the same time it will effectively provide waterpower head. And so far as the power storage is concerned, the Definite Project makes plain that it is functionally related to the broad objectives of flood control. The operation of the reservoir will involve a consideration of its multiple purposes.⁵³ Its operation in periods of drought so as to regularize the flow below the dam;⁵⁴ the reduction in reservoir outflow in case of floods down the valley; the increase of the outflow, in case of impending floods from above the dam, to the maximum "bank full capacity downstream of the dam, so that the maximum amount of flood control storage will be available when the peak of the flood reaches the reservoir, thereby reducing the peak outflow of the reservoir to a minimum"⁵⁵—these are ample evidence that the power features and the flood control features of the dam, including river flow, are not unrelated. They demonstrate that in operation of the dam the several functions will be interdependent and that the conflicts between the respective requirements of flood control and power development are here more apparent than real.⁵⁶ They show that this is nonetheless a flood control project which will "fully control the maximum flood of

⁵² Definite Project, pp. 10-11, App. F., p. 5. And see Hearings, H. Comm. on Flood Control, 75th Cong., 3d Sess., p. 641.

⁵³ Definite Project, p. 26.

⁵⁴ *Id.*, App. F., p. 7; Report, p. 67.

⁵⁵ Definite Project, pp. 26, 12.

⁵⁶ It was noted in Nat. Res. Com., Energy Resources & National Policy (1939), p. 276, that:

"The most obvious and most discussed conflict of purpose in use of water resources relates to flood control and power. Since flood control is of great urgency in so many basins, one may appear to demolish all concept of wisdom in production of water power by the pat observation that an empty reservoir will not run turbines and a full reservoir will not catch floods. With respect to a particular reservoir, the observation is in point, but it is not thereby conclusive. That one reservoir might be reserved for flood control and another on the same stream used for power probably stumps no one. Neither should it stump anyone that part of a single reservoir be reserved for flood and part be used for power. Indeed, it would often cost less to provide flood-control space in the same reservoir with power space than to build a separate reservoir. And it should not be forgotten that storage to prevent the ordinarily low flow of dry seasons is itself flood prevention in that better sustained ordinary flow tends to maintain clear channels. If the conflict really were irreconcilable, we should be forced to abolish private water-power plants on every stream system requiring flood control. If private power and public flood control may harmonize, one may believe the same of public power and public flood control."

And see The Norris Project (1940), ch. 8.

record",⁵⁷ though power, it is hoped, will pay the way. Whether the work of flood-control, including river flow, would be better done by a dam of one design or another is for Congress to determine. And, as we have said, the fact that ends other than flood control will also be served, or that flood control may be relatively of lesser importance does not invalidate the exercise of the authority conferred on Congress. *Kaukauna Water Power Co. v. Green Bay & Mississippi Canal Co.*, 142 U. S. 254, 275, 276; see *In re Kollock*, 165 U. S. 526, 536; *Weber v. Freed*, 239 U. S. 325, 329-330; *Arizona v. California*, *supra*, p. 456.

The Tenth Amendment does not deprive "the national government of authority to resort to all means for the exercise of a granted power which are appropriate and plainly adapted to the permitted end." *United States v. Darby*, *supra*, p. 124, and cases cited. Since the construction of this dam and reservoir is a valid exercise by Congress of its commerce power, there is no interference with the sovereignty of the state.⁵⁸ *United States v. Appalachian Power Co.*, *supra*, p. 428. The fact that land is owned by a state is no barrier to its condemnation by the United States. *Wayne County v. United States*, 53 Ct. Cls. 417, *aff'd* 252 U. S. 574. There is no complaint that any property owner will not receive just compensation for the land taken. The possible adverse effect on the tax revenues of Oklahoma as a result of the exercise by the federal government of its power of eminent domain is no barrier to the exercise of that power. "Whenever the constitutional powers of the federal government and those of the state come into conflict, the latter must yield." *Florida v. Mellon*, 273 U. S. 12, 17. Nor can a state call a halt to the exercise of the eminent domain power of the federal government because the subsequent flooding of the land taken will obliterate its boundary. And the suggestion that this project interferes with the state's own program for water development and conservation is likewise of no avail. That program must bow before the "superior power" of Congress. *United States v. Rio Grande Dam & Irrigation Co.*, *supra*, p. 703; *New Jersey v. Sargent*, 269 U. S. 328, 337; *Arizona v. California*, 298 U. S. 558, 569; *United States v. Appalachian Power Co.*, *supra*.

Affirmed.

⁵⁷ Report, p. 88.

⁵⁸ The government concedes that there will be no loss of political jurisdiction over the lands taken except with the consent of the state. Art. 1, § 8, clause 17 of the Constitution.